

WATERMASTER SERVICE



UPPER LOS ANGELES RIVER AREA

POLICIES AND PROCEDURES



INSTITUTE OF GOVERNMENTAL
STUDIES LIBRARY

MAR 30 1998

FEBRUARY 1998

UNIVERSITY OF CALIFORNIA



Digitized by the Internet Archive
in 2025 with funding from
State of California and California State Library

<https://archive.org/details/C124915179>

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 -- COUNTY OF LOS ANGELES

WATERMASTER SERVICE

UPPER LOS ANGELES RIVER AREA (ULARA)

POLICIES AND PROCEDURES

February 10, 1998

ULARA WATERMASTER
Melvin L. Blevins, P.E.

ASSISTANT WATERMASTER
Richard A. Nagel, P.E.

WATERMASTER ADMINISTRATOR
Patricia T. Kiechler

INSTITUTE OF GOVERNMENTAL
STUDIES LIBRARY

MAR 30 1998

UNIVERSITY OF CALIFORNIA

WATERMASTER STAFF

Andy Agra	Groundwater Modeler/GIS Analyst
Hadi Jonny, P.E.	Groundwater Modeler
Mario Acevedo, P.E.	Report Advisor
Tina Wilson, P.E.	Report Investigator
Bebe Barber-Turgeon	Archivist
Paula Giles	Senior Clerk
Jacqueline Covian	Clerk

WATERMASTER CONSULTANT
John F. Mann, Jr., Ph.D.

REPORT CONTRIBUTOR AND EDITOR
Ernest Wong, P.E.

Copies may be purchased for \$15.00 (including shipping)
P.O. Box 51111, Room 1311
Los Angeles, CA 90051-0100
213/367-1020 or 213/367-0921

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 - COUNTY OF LOS ANGELES

WATERMASTER SERVICE

UPPER LOS ANGELES RIVER AREA (ULARA)

POLICIES AND PROCEDURES

February 10, 1998

ULARA WATERMASTER

Melvin L. Blevins, P.E.

ASSISTANT WATERMASTER

Richard A. Nagel, P.E.

WATERMASTER ADMINISTRATOR

Patricia T. Kiechler

WATERMASTER STAFF

Andy Agra	Groundwater Modeler/GIS Analyst
Hadi Jonny, P.E.	Groundwater Modeler
Mario Acevedo, P.E.	Report Advisor
Tina Wilson, P.E.	Report Investigator
Bebe Barber-Turgeon	Archivist
Paula Giles	Senior Clerk
Jacqueline Covian	Clerk

WATERMASTER CONSULTANT

John F. Mann, Jr., Ph.D.

REPORT CONTRIBUTOR AND EDITOR

Ernest Wong, P.E.

P.O. Box 51111, Room 1311
Los Angeles, CA 90051-0100
213/367-1020 or 213/367-0921

These ULARA Watermaster Policies and Procedures setting forth provisions and intent of the ULARA Judgment (January 26, 1979 and March 21, 1984), have been reviewed and approved by the ULARA Watermaster and the Administrative Committee.

DATED: February 10, 1998

APPROVED:

President

By Fred Lantz
Fred Lantz, Assistant General Manager
The City of Burbank

Vice-President

By Donald R. Froelich
Donald R. Froelich, Water Services Administrator
The City of Glendale

Members

for Michael Drake
Michael Drake, Director of Public Works
The City of San Fernando

By Gerald A. Gewe
Gerald A. Gewe, Executive Assistant to the Director of Water Services
The City of Los Angeles

By Michael G. Sovich
Michael G. Sovich, General Manager
Crescenta Valley Water District

By Melvin L. Blevins
Melvin L. Blevins, ULARA Watermaster

TABLE OF CONTENTS

SECTION	PAGE
1.0 <u>INTRODUCTION</u>	1
2.0 <u>SUMMARY OF PUMPING AND GROUNDWATER STORAGE RIGHTS</u>	2
2.1 <u>SAN FERNANDO BASIN RIGHTS</u>	2
2.1.1 <u>NATIVE WATER RIGHTS</u>	2
2.1.2 <u>IMPORT RETURN WATER RIGHTS</u> (Recharge of Delivered Water)	3
2.1.2.1 Los Angeles.....	3
2.1.2.2 Glendale.....	3
2.1.2.3 Burbank	3
2.1.2.4 San Fernando.....	3
2.1.2.5 Los Angeles, Glendale and Burbank - Carry Over Credit.....	4
2.1.3 <u>STORED WATER RIGHTS</u>	4
Los Angeles, Glendale and Burbank	
2.1.4 <u>PHYSICAL SOLUTION WATER RIGHTS</u>	4
2.1.4.1 Los Angeles' Physical Solution Water.....	4
2.1.4.2 Glendale's Physical Solution Water.....	5
2.1.4.3 Burbank's Physical Solution Water.....	6
2.1.5 <u>OTHER CATEGORIES OF WATER RIGHTS</u>	6
2.1.5.1 Over-Extractions.....	6
2.1.5.1.1 Burbank and Glendale.....	6

<u>SECTION</u>	<u>PAGE</u>
2.1.5.1.2 Los Angeles	8
2.1.6 <u>OTHER GROUNDWATER PUMPING ACTIVITIES</u>	8
2.1.6.1 Pumping for Dewaterers.....	8
2.1.6.1.1 Within Los Angeles	8
2.1.6.1.2 Outside Los Angeles	10
2.1.6.2 Provisions for Charging to Basin Account - SFB.....	10
2.1.6.2.1 Temporary Losses	10
2.1.6.2.2 Operational Losses for Groundwater Treatment Facilities	11
2.2 <u>SYLMAR BASIN RIGHTS</u>	12
2.2.1 <u>STIPULATION</u>	12
2.2.2 <u>PRIVATE PARTY RIGHTS</u>	13
2.2.2.1 Moordigian and Meurer Engineering.....	13
2.2.2.2 Other Party Rights.....	14
2.2.3 <u>STORED WATER RIGHTS</u>	14
2.2.4 <u>OVER-EXTRACTION</u>	14
2.3 <u>VERDUGO BASIN RIGHTS</u>	15
2.3.1 <u>GLENDALE AND THE CRESCENTA VALLEY WATER DISTRICT</u>	15
2.3.2 <u>PRIVATE DEFENDANT RIGHTS</u>	16
2.3.3 <u>STORAGE RIGHTS</u>	16
2.3.4 <u>MODIFICATION OF ANNUAL PUMPING RIGHTS</u>	16
2.4 <u>EAGLE ROCK BASIN RIGHTS</u>	16
2.4.1 <u>NATIVE WATER</u>	16
2.4.2 <u>IMPORT RETURN WATER</u>	16
2.4.3 <u>PHYSICAL SOLUTION WATER</u>	17

<u>SECTION</u>	<u>PAGE</u>
2.4.4 <u>STORAGE RIGHTS</u>	17
3.0 <u>WATERMASTER ACCOUNTING OF GROUNDWATER PUMPING AND STORAGE</u>	17
3.1 <u>BURBANK AND GLENDALE</u>	17
3.2 <u>LOS ANGELES</u>	18
3.3 <u>SAN FERNANDO (SYLMAR BASIN)</u>	18
3.4 <u>CRESCENTA VALLEY WATER DISTRICT</u>	19
3.5 <u>OTHER PARTIES AND NON-PARTIES</u>	19
3.6 <u>METERING REQUIREMENTS</u>	19
3.6.1 <u>WATER-MEASURING DEVICES</u>	19
3.6.2 <u>METER TEST PROGRAM</u>	20
3.7 <u>INSPECTION</u>	20
4.0 <u>WATERMASTER AUTHORITY ON WATER RIGHTS</u>	20
5.0 <u>WATERMASTER MANAGEMENT OF GROUNDWATER QUALITY</u>	21
5.1 <u>COORDINATED RESPONSE FOR GROUNDWATER CLEANUP AND CONTROL</u>	22
5.2 <u>WELLS</u>	24
5.3 <u>OPERATING PRINCIPLES - SAN FERNANDO BASIN</u>	24
5.4 <u>GROUNDWATER PUMPING AND SPREADING PLAN FOR THE UPPER LOS ANGELES RIVER AREA</u>	25
5.5 <u>GROUNDWATER TREATMENT FACILITIES</u>	28
5.5.1 <u>TREATED GROUNDWATER DELIVERED FOR CONSUMPTIVE USE</u>	28
5.5.2 <u>TREATED WATER DISCHARGED TO A STORM DRAIN</u>	29
5.5.3 <u>MONTHLY REPORTING OF METERED AMOUNTS</u>	29
5.5.4 <u>NOTIFICATION OF PROPOSED GROUNDWATER TREATMENT FACILITIES</u>	29

SECTION	PAGE
6.0 <u>ULARA WATERMASTER AND ADMINISTRATIVE COMMITTEE RULES</u>	31
6.1 <u>FUNCTION AND PURPOSE OF ADMINISTRATIVE COMMITTEE</u>	31
6.2 <u>MEMBERSHIP OF ADMINISTRATIVE COMMITTEE</u>	31
6.2.1 <u>MEMBERSHIP</u>	31
6.2.2 <u>ALTERNATES</u>	31
6.2.3 <u>TERM</u>	32
6.2.4 <u>NONPARTICIPATION</u>	32
6.3 <u>OFFICERS OF ADMINISTRATIVE COMMITTEE</u>	32
6.3.1 <u>OFFICERS AND DUTIES</u>	32
6.4 <u>MEETINGS OF THE ADMINISTRATIVE COMMITTEE</u>	32
6.4.1 <u>ANNUAL MEETING</u>	32
6.4.2 <u>MONTHLY MEETINGS</u>	33
6.4.3 <u>WAIVER OF NOTICE</u>	33
6.4.4 <u>VOTING AND ACTION</u>	33
6.4.5 <u>ACTION WITHOUT MEETING</u>	34
6.5 <u>ULARA WATERMASTER RULES AND GUIDELINES</u>	34
7.0 <u>REPORTS TO THE ULARA WATERMASTER</u>	34
7.1 <u>MONTHLY REPORTS</u>	34
7.1.1 <u>FORM OF REPORTS</u>	34
7.1.2 <u>SPECIFICATIONS IN REPORT</u>	35
7.1.3 <u>CHANGE IN WELL STATUS</u>	35
7.1.4 <u>FILING AND COPIES</u>	35
7.2 <u>SEMIANNUAL REPORTS WATER LEVEL MEASUREMENTS</u>	36
7.3 <u>ANNUAL REPORTS</u>	36

SECTION	PAGE
8.0 <u>REPORTS BY THE ULARA WATERMASTER</u>	36
8.1 <u>REPORTS BY THE ULARA WATERMASTER</u>	36
8.1.1 <u>ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PARTIES</u>	37
8.1.2 <u>ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PRIVATE PARTIES AND NON-PARTIES</u>	37
8.2 <u>ANNUAL REPORTS - ULARA WATERMASTER</u>	37
8.2.1 <u>ULARA WATERMASTER SHALL PROVIDE AN ANNUAL REPORT</u>	37
8.2.2 <u>DRAFT ANNUAL REPORT TO ULARA ADMINISTRATIVE COMMITTEE</u>	38
8.2.3 <u>DRAFT ANNUAL GROUNDWATER PUMPING AND SPREADING PLAN TO ULARA ADMINISTRATIVE COMMITTEE</u>	39
8.2.4 <u>DATA FOR INVOICE OF PHYSICAL SOLUTION AND GROUNDWATER CLEANUP WATER</u>	39
9.0 <u>INFORMATION AVAILABLE RELATED TO PUMPING AND BASIN MANAGEMENT - SAN FERNANDO VALLEY</u>	39
9.1 <u>BASIC DATA - SAN FERNANDO VALLEY</u>	39
9.2 <u>REVIEW DOCUMENTS - SAN FERNANDO VALLEY</u>	40
9.3 <u>ADDITIONAL ITEMS OF INFORMATION - SAN FERNANDO VALLEY</u>	40

A MAPS OF ULARA

VICINITY MAPS: California and Los Angeles	A-1
ULARA	A-2
PUBLIC AGENCY WATER SERVICE AREAS	A-2
PRIVATE PARTIES	A-3

INDIVIDUAL PRODUCERS ULARA WATERMASTER REPORT 1995-96 Water Year	A-4
---	-----

B FORMS - SAMPLES (Burbank)

MONTHLY WATER PRODUCTION REPORT	B-1
MONTHLY AND ACCUMULATIVE WATER PRODUCTION REPORT	B-2
ULARA WATERMASTER ACCOUNTS	B-3

**C ULARA JUDGMENT - Table of Contents and
Section 1 through 10**

C-1

**D STIPULATION AND ORDER REGARDING SYLMAR BASIN
(Dated March 22, 1984)**

D-1

E GUIDELINES FOR GROUNDWATER STORAGE

E-1

F STATUS SAFE YIELD CONDITIONS

SAN FERNANDO BASIN - STATUS OF SAFE-YIELD CONDITIONS	F-1
SYLMAR BASIN - STATUS OF SAFE-YIELD CONDITIONS	F-2
VERDUGO BASIN - STATUS OF SAFE-YIELD CONDITIONS	F-3
EAGLE ROCK BASIN - STATUS OF SAFE-YIELD CONDITIONS	F-4

G SAFE YIELD FACT SHEETS

G-1

SAN FERNANDO BASIN	G-2
SYLMAR BASIN	G-25
VERDUGO BASIN	G-47
EAGLE ROCK	G-62

1.0 INTRODUCTION

It is the purpose and function of the ULARA Watermaster's Policies and Procedures to set forth a summary of the decreed extraction rights within the Upper Los Angeles River Area (ULARA), and a clear picture of overall groundwater management, together with a detailed statement amplifying the rules for the ULARA Watermaster (Watermaster) and Administrative Committee's activities

The Watermaster Service, Upper Los Angeles River Area - Policies and Procedures (Policies and Procedures) consists of specific provisions for the Watermaster to administer the Judgment addressing the following:

- Summary of water rights as established in the Judgment and its amendments.
- Accounting procedures for groundwater extractions and storage.
- Management of groundwater quality.
- Establishment of the ULARA Administrative Committee.
- Reporting requirements and procedures.

Where provisions of these Policies and Procedures are derived from or interpretive of specific provisions of the Judgment, they are annotated by a reference to the applicable Judgment provision, i.e., (Section No. of the Judgment). The intent of the Watermaster's Policies and Procedures is to be consistent with the provisions and intent of the Judgment and the Stipulation and Order regarding the Sylmar Basin (Stipulation), dated 22, 1984. Refer to Appendix A for maps of the ULARA and Appendix C for the Judgment, January 26, 1979, Appendix D for the Stipulation, March 22, 1984. Appendix E contains "Guidelines for Groundwater Storage." Appendix F provides a status report on the safe yield of each of the four basins located within the ULARA and Appendix G provides background data and facts for each of the basins.

For brevity and simplicity, defined terms are used herein in the sense in which they are defined and used in the ULARA Judgment (Section 2.1 of the Judgment).

2.0 SUMMARY OF PUMPING AND GROUNDWATER STORAGE RIGHTS

The rights to pump and store groundwater in the four basins within the San Fernando Valley (SFV) are separately summarized by basin for purposes of providing a clear description of those rights. For more detailed specifications and intent of the rights of the parties under the terms of the Judgment, reference is made to Sections 1 through 10 of the Judgment, which are attached hereto as Appendix C. Appendix C also includes, for ease of reference, the full table of contents of the Judgment.

2.1 SAN FERNANDO BASIN RIGHTS

Although the waters in the San Fernando Basin (SFB) constitute a single physical body of groundwater, they are divided into four major categories (native waters, import return water, stored water, and physical solution water) for legal purposes. The rights of the parties to extract groundwater depend upon their rights and entitlements to each of the categories. The Watermaster records will account for the total allowable pumping and will also maintain records in the separate categories.

2.1.1 NATIVE WATER RIGHTS

Los Angeles has Pueblo rights to all native water which constitute a part of the surface flow of the Los Angeles River or groundwater within the SFB. No other party has any rights to such native waters. The Native Safe Yield is 43,660 acre-feet per year (AF/yr.) - (Sections 4.2.4 and 5.1.1.1 of the Judgment).

2.1.2 IMPORT RETURN WATER RIGHTS (Recharge of Delivered Water) - (Section 5.2.1 of the Judgment)

Los Angeles, Glendale and Burbank each has rights to extract from the SFB its import return (recharge of delivered water), i.e., the groundwater derived from percolation attributable to delivered imported water. The credit for such import return water shall be accrued and accounted for by the ULARA Watermaster, as follows:

2.1.2.1 Los Angeles

20.8 percent of all delivered water (including reclaimed water) to the valley fill lands of the SFB. (Section 5.2.1.3 of the Judgment)

2.1.2.2 Glendale

20.0 percent of all delivered water (including reclaimed water) to the SFB and its tributary hill and mountain areas (i.e., total delivered water [including reclaimed water], less 105 percent of total sales by Glendale in the Verdugo Basin and its tributary hills).
(Section 5.2.1.3 of the Judgment)

2.1.2.3 Burbank

20.0 percent of all delivered water (including reclaimed water) to the SFB and its tributary hill and mountain areas.
(Section 5.2.1.3 of the Judgment)

2.1.2.4 San Fernando

San Fernando no longer receives credit for import return water in the San Fernando Basin due to special credits provided in

the Sylmar Basin Stipulation of March 22, 1984. San Fernando receives up to one-half of the the Sylmar Basin's total safe yield. (6,510 AF/yr. - July 16, 1996)

2.1.2.5 Los Angeles, Glendale and Burbank - Carry Over Credit

The credit for groundwater and Import Return Water (recharge of all delivered water) not extracted in a given water year will be carried over, separately accounted for, and maintained as a cumulative credit, under the category of stored water, by the Watermaster for future extractions. (Section 5.2.1.4 of the Judgment)

2.1.3 STORED WATER RIGHTS

Los Angeles, Glendale, and Burbank, each, has the right to store water in the SFB by direct spreading of imported water and reclaimed water or in lieu practices, and each party has the right to extract equivalent amounts. All such storage shall be reported to the Watermaster. (Section 5.2.1.2 of the Judgment). Guidelines for the storage of water in the SFB are available in Appendix E.

2.1.4 PHYSICAL SOLUTION WATER RIGHTS

2.1.4.1 Los Angeles' Physical Solution Water

Under Section 9 of the Judgment, several parties other than Los Angeles are entitled to extract physical solution water chargeable to the rights of Los Angeles upon payment of specified

amounts of money to Los Angeles. Parties that are entitled to physical solution water rights can apply for such water from Los Angeles to be used after they have used their import return water credit. The parties and their maximum physical solution quantities are as follows:

Glendale

5,500 AF/yr. (Section 9.4 of the Judgment)

Burbank

4,200 AF/yr. (Section 9.4 of the Judgment)

Van de Kamp's

120 AF/yr. (Section 9.3.1 of the Judgment)

Toluca Lake

100 AF/yr. (Section 9.3.1 of the Judgment)

Sportsmen's Lodge, Inc.

25 AF/yr. (Section 9.3.1 of the Judgment)

2.1.4.2 Glendale's Physical Solution Water

Glendale may furnish physical solution water out of its share of Los Angeles' physical solution water to the following parties in accordance with the provisions in Section 9.3.1 of the Judgment:

Forest Lawn 400 AF/yr.

Environmentals, Inc. 75 AF/yr.

(Now Angelica Healthcare

Services - formerly

Southern Services Co.)

2.1.4.3 Burbank's Physical Solution Water

Burbank may furnish physical solution water out of its share of Los Angeles' physical solution water to the following parties in accordance with the provisions in Section 9.3.1 of the Judgment:

Valhalla	300 AF/yr.
Lockheed	25 AF/yr.

2.1.5 OTHER CATEGORIES OF WATER RIGHTS

2.1.5.1 Over-Extractions

2.1.5.1.1 Burbank and Glendale

a. Ten Percent Over-Extraction

In addition to current extractions of import return water, stored water, and physical solution rights, Burbank and Glendale may each in any water year extract from the SFB an amount not to exceed ten percent (10%) of its last annual credit for import return water. This over-extraction may occur without additional approval of the Watermaster. There is the obligation however to replace such over-extraction by reduced extractions during the next water year. Any such over-extraction, which if not replaced in the next water year will be deemed physical solution water extracted

in the subsequent water year (Section 5.2.1.5 of the Judgment).

b. Emergency Condition

In the event that the 10% over-extraction right is also exhausted and either Burbank or Glendale, or both of these parties is required to pump additional groundwater for cleanup purposes, each party may request to enter into an emergency condition provision. A written request for the impacted water year is to be submitted to the Watermaster for approval. This over-extraction under an emergency condition, if approved, is subject to payment to Los Angeles, the party whose water right is affected. The rate for this water will be subject to agreement with Los Angeles. The emergency condition provision provided in Section 9.4 of the Judgment follows:

In the event of emergency, and upon stipulation or motion and subsequent order of the Court, said quantities (Physical solution extractions) may be enlarged in any year.

This emergency condition need is satisfied by the Watermaster's approval, as stated above.

2.1.5.1.2 Los Angeles

Whenever the needs of Los Angeles require the extraction of groundwater in excess of the native safe yield, plus any import return water credit and stored water credit, Los Angeles may extract from the Underlying Pueblo Waters, subject to an obligation to replace such excess as soon as practical (Section 6.8 of the Judgment).

2.1.6 OTHER GROUNDWATER PUMPING ACTIVITIES

2.1.6.1 Pumping for Dewatering

2.1.6.1.1 Within Los Angeles

a. Proposed Facilities

Within certain areas of the SFB in the City of Los Angeles (see Map - Appendix A - Water Service Areas), buildings or building modifications that are proposed may require dewatering facilities that can affect SFB storage and Los Angeles' water rights. Thus, the building permit applications for these proposed buildings or modifications that are submitted to the Los Angeles Department of Building and Safety (DBS) are to be referred to the Office of the Watermaster for review and approval with regard to dewatering plans. If the Watermaster determines that Los Angeles' water rights are affected by the dewatering, an agreement

must be established and approved by the Watermaster and the Los Angeles Department of Water and Power (DWP) with the party responsible for the dewatering activity before the issuance of a Certificate of Occupancy by the DBS.

b. Existing Facilities

For existing dewatering facilities within the SFB in Los Angeles that were not reviewed and approved by the Watermaster, the Watermaster has the authority to investigate the dewatering activity and to evaluate its impact on SFB storage and Los Angeles' water rights. The Watermaster is responsible for notifying the appropriate parties and establishing any agreements between such parties, the Watermaster, and Los Angeles.

In either case, if the dewatering party requests to discharge the groundwater to a storm drain or to use the groundwater in a consumptive manner, the dewatering party would be required to pay Los Angeles for the amount of water being discharged or used. Further, the dewatering party is also required to meter and report to the Watermaster the amount of groundwater being discharged or used on a monthly basis.

2.1.6.1.2 Outside Los Angeles

For buildings or building modifications that are proposed within the SFB and not in the City of Los Angeles that may require dewatering facilities, procedures to provide Watermaster review and approval regarding proposed dewatering plans have not been established. Thus, the dewatering parties and the affected parties with water rights are to establish agreements, as required, that are subject to review and approval by the Watermaster. Again, the dewatering parties are required to meter and report the amount of groundwater being discharged or used on a monthly basis to the Watermaster.

2.1.6.2 Provisions For Charging to Basin Account-SFB

2.1.6.2.1 Temporary Losses

Any party or non-party may request that they be permitted to pump groundwater on a temporary basis, with the amount being charged to the Basin Account. Thus, they would be exempted from water right charges to any party. A written request must be submitted to the Watermaster stating the purpose and the estimated volume of the pumping. At the discretion of the Watermaster, a recommendation may be made

to the ULARA Administrative Committee that the temporary pumping be allowed and be charged to the Basin Account. The Watermaster will also recommend the conditions on the time, volume, manner, method of reporting, and similar circumstances of the pumping. The ULARA Administrative Committee, by unanimous vote, may then approve the request as recommended.

In determining whether to recommend that temporary pumping be charged to the Basin Account, the Watermaster shall consider the stated purpose of the pumping, which can include, but not be limited to, the following:

- Groundwater studies for aquifer characterization
- Plume definition
- Groundwater treatment facility testing and startup
- Temporary dewatering for construction purposes

The Watermaster shall also consider whether the temporary groundwater pumping is consistent with the purposes served by the Judgment and is for the benefit of the basin.

2.1.6.2.2 Operational Losses for Groundwater Treatment Facilities

It is recognized that treatment facilities established for groundwater cleanup may need to pump groundwater for special back-

washing and facility system development. In such cases, the pumping can be charged to the Basin Account under this section. The plant operator must meter and report all well production amounts and the reason for the operational losses of groundwater to the municipal water purveyor and the Watermaster. The municipal water purveyor shall then meter and report to the Watermaster the amount of treated groundwater actually received from the operator and the reported reason for the loss to be considered for assignment to the Basin Account. If the Watermaster agrees that the loss falls within the scope of the Basin Account, approval will be granted to charge the loss to the Basin Account. Any amount charged to the Basin Account will be exempted from being charged to any party's water rights.

The Watermaster will be responsible for accounting and reporting of pumping under this section.

2.2 SYLMAR BASIN RIGHTS

2.2.1 STIPULATION

On August 26, 1983, the ULARA Watermaster reported to the Court pursuant to Section 10.2 of the Judgment that the Sylmar Basin was in a condition of overdraft (see Appendix D). In response to the Watermaster's letter and a Minute Order of the California Superior Court, the Cities of Los Angeles and San Fernando responded by a letter

to the Court, agreeing with the Watermaster's finding on overdraft. On March 22, 1984, Judge Harry L. Hupp of the Superior Court signed the Stipulation, effective October 1, 1984, stipulating the following:

The Cities of Los Angeles and San Fernando shall be limited in their pumping to bring the total pumping within the safe yield of the basin, less any rights exercised by the private parties. Los Angeles and San Fernando were established to each have rights of 3,105 AF/Yr.

Based on the recommendation of the Watermaster and by unanimous vote of the Administrative Committee on July 16, 1996, Los Angeles' and San Fernando's pumping rights were each increased up to 3,255 AF/yr. This increase is subject to continued evaluation by the Watermaster with final approval by the ULARA Administrative Committee for a period up to 10 years with an opportunity for earlier review.

2.2.2 PRIVATE PARTY RIGHTS

2.2.2.1 Moordigian and Meurer Engineering

The Judgment recognized two parties with water rights. Moordigian no longer has water rights. No pumping has taken place since 1957 and the lands have been sold. Meurer Engineering (now Santiago Estates) was estimated to have pumped less than 0.5 AF/yr. since 1975-76, with no anticipated increase in the future. Even though

Santiago Estates' pumping has been less than one AF/yr., provision for their rights pursuant to Section 5.1.2.2 of the Judgment was established in the Stipulation. The pumping that occurs pursuant to the overlying rights of the Santiago Estates must be subtracted from the safe yield of the Sylmar Basin (which is presently 6,510 AF/yr.). Los Angeles and San Fernando are each entitled to one-half of the remainder.

2.2.2.2 Other Party Rights - No other party owns any right to extract native or import return waters from the Sylmar Basin.

2.2.3 STORED WATER RIGHTS

Los Angeles and San Fernando each have the right to store water in the Sylmar Basin in accordance with procedures set forth in Section 2.1.3, and are subject to the same accounting procedures as are applicable in the SFB. These stored water rights were assigned to Los Angeles and San Fernando under the Stipulation, Paragraph 4.

2.2.4 OVER-EXTRACTION

It is recognized that unusual circumstances, including weather conditions or water system operational problems, may result in water shortages. Los Angeles and San Fernando shall have the right to request the Watermaster for authority to over-extract from the Sylmar Basin an amount not to exceed ten per cent (10%) of their annual entitlement plus stored water credit. The request shall identify the unusual circumstances and shall justify the need for over-extractions. At the

discretion of the Watermaster each request for over-extraction shall be reviewed and shall be approved, modified, or denied. The over-extraction may be approved from year to year while the unusual circumstances continue, so long as the total amount of water extracted by either Los Angeles or San Fernando does not exceed 1,000 AF.

When the unusual circumstances cease, notification of the cessation and a plan for the replacement of the over-extracted amount must be submitted to the Watermaster. The Watermaster shall at his discretion approve the plan or order that it be resubmitted. The plan must provide at a minimum that all water over-extracted be replaced within six years by under-pumping, except that under-pumping will not be required to exceed ten percent of the annual allowed pumping of the party. (Refer to Stipulation, Paragraph 2).

2.3 VERDUGO BASIN RIGHTS

2.3.1 GLENDALE AND THE CRESCENTA VALLEY WATER DISTRICT

Glendale and Crescenta Valley Water District (Crescenta Valley) own appropriative and prescriptive rights in the Verdugo Basin to extract, with equal priority, the following quantities of groundwater: (Section 5.1.3.2 of Judgment).

Glendale	3,856 AF/yr.
Crescenta Valley	3,294 AF/yr.

2.3.2 PRIVATE DEFENDANT RIGHTS

No private defendant, as such, is entitled to extract groundwater from Verdugo Basin.

(Section 5.1.3.2 of the Judgment)

2.3.3 STORAGE RIGHTS

Glendale and Crescenta Valley do not have a right to store water. The Verdugo Basin is too steep and shallow to implement storage activities.

2.3.4 MODIFICATION OF ANNUAL PUMPING RIGHTS

With approval of the Watermaster, either Glendale or the Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr. The modification of the groundwater pumping shall be reviewed by the Watermaster annually.

2.4 EAGLE ROCK BASIN RIGHTS

2.4.1 NATIVE WATER

The Eagle Rock Basin has no significant or measurable native safe yield and no parties have rights to native waters in this Basin. The Pueblo Right of Los Angeles does not extend to this basin.
(Section 5.1.4 of the Judgment)

2.4.2 IMPORT RETURN WATER

Los Angeles has caused imported water to be delivered for use on lands overlying Eagle Rock Basin. Return flow from such water constitutes the entire safe yield of Eagle Rock Basin.

Los Angeles has the right to extract or cause to be extracted the entire safe yield of the Eagle Rock Basin. (Section 5.2.4 of the Judgment)

2.4.3 PHYSICAL SOLUTION WATER

Foremost (now McKesson/Sparkletts) and Deep Rock (now Hinkle-Schmidt) have physical solution rights to extract Los Angeles' water from Eagle Rock Basin (Section 9.2.1 of the Judgment). These parties pay Los Angeles for all water extracted. Each party may extract up to 500 AF/Yr. pursuant to stipulations filed on November 1, 1965 to the Judgment. However, the estimated recharge from delivered water (safe-yield) is up to 300 AF/Yr. for the entire basin. It would not be possible for each party to pump 500 AF/Yr.

2.4.4 STORAGE RIGHTS

Los Angeles and the Physical Solution parties have no storage rights in the Eagle Rock Basin.

3.0 WATERMASTER ACCOUNTING OF GROUNDWATER PUMPING AND STORAGE

The Watermaster is responsible for the accounting of each party's annual extraction right.

3.1 BURBANK AND GLENDALE (SAN FERNANDO BASIN)

In the San Fernando Basin annual accounting for these parties will be performed in the following manner: Import Return water credit will be taken first, followed by all or a portion of either physical solution water or stored water credits. At the end of each water year, each party will notify the Watermaster, in writing, of their election as to whether water in excess of import return water credit will be debited from physical solution water or stored water credits, or a portion of both

Glendale (Verdugo Basin)

In the Verdugo Basin Glendale only will first take its annual allowable right. There is no storage right. With the approval of the Watermaster, Glendale or Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr.

Each party must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

3.2 LOS ANGELES

San Fernando Basin

In the San Fernando Basin native safe yield water will be taken first, followed by import return water credit, and finally, stored water credits. In the event all of these rights are exhausted, Los Angeles may initiate provisions under Section 6.8 of the Judgment.

Sylmar Basin

In the Sylmar Basin the amount allowed by the Stipulation annually will be taken first, followed by any stored water credits. In the event all of these rights are exhausted, Los Angeles may initiate provisions under the Stipulation.

Los Angeles must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

3.3 SAN FERNANDO (SYLMAR BASIN)

The amount allowed by the Stipulation annually will be taken first, followed by any stored water credits. In the event all of these rights are exhausted, San Fernando may initiate provisions under the Stipulation.

San Fernando must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

3.4 CRESCENTA VALLEY WATER DISTRICT

In the Verdugo Basin Crescenta Valley will first take its annual extraction right. There is no storage right. With the approval of the Watermaster, Glendale or Crescenta Valley may pump the unused portion of the other party's annual pumping allocation, so long as, the total amount pumped is within the total safe yield of 7,150 AF/Yr.

Each party must file monthly, semi-annual, and annual reports as detailed in Section 7.0 of the Policies and Procedures.

3.5 OTHER PARTIES AND NON-PARTIES

Other parties and non-parties pumping or discharging groundwater from the ULARA including dewaterers and those involved with groundwater cleanup programs must file monthly production reports and any associated water quality reports with the Watermaster. Refer to Appendix B-1, for a sample of a type of Monthly Production Form.

3.6 METERING REQUIREMENTS

3.6.1 WATER-MEASURING DEVICES

The amount of water pumped by each well or well field must be determined by a procedure acceptable to the Watermaster. All production wells must be equipped with a positive displacement, velocity impeller, Venturi or orifice-type meter with a totalizer. The totalizer should be susceptible to correction by, and only by, changing mechanical gear equipment.

3.6.2 METER TEST PROGRAM

Each party is required to check the production from all water wells operated by or for such party. The metering device measuring well production shall be tested for accuracy at least once within each three to five - year period and the results filed with the Watermaster. Costs of such testing will be at each party's expense and may be performed by a party's own qualified personnel.

3.7 INSPECTION

The Watermaster has the right to verify, upon prior request, the production and metering of any well or wells owned by any party or non-party, and shall have the right of reasonable field inspection for such purpose.

4.0 WATERMASTER AUTHORITY ON WATER RIGHTS

If a field inspection or investigation by the Watermaster reveals that a party or non-party without water rights is extracting groundwater from the ULARA, the Watermaster has the authorization of the California Superior Court to enforce the provisions of the Judgment by taking one or more of the following actions:

- Advising the party or non-party of the provisions of the Judgment and the role of the Watermaster in administering the Judgment of the California Superior Court.
- Advising the party or non-party of their water rights, if any, in accordance with the Judgment and their responsibilities for metering and reporting.
- Notifying the applicable ULARA parties that are affected with regards to water rights.
- If appropriate, notifying the party or non-party without water rights to cease their groundwater

- extractions from the ULARA and to destroy their wells that are used for pumping groundwater.
- If necessary, arranging for a hearing before the California Superior Court between the party or non-party and the Watermaster to resolve any ULARA water rights issues.

The party or non-party will also meet with the ULARA party that is affected with regard to water rights to discuss this matter.

5.0 WATERMASTER MANAGEMENT OF GROUNDWATER QUALITY

In addition to the Watermaster's responsibilities to administer the Judgment, manage water rights, ensure the basin objectives of a safe yield operation, the Watermaster is also responsible for managing the groundwater quality of the basin. This added responsibility of groundwater quality management is to ensure that the objectives of the California Regional Water Quality Control Board (RWQCB) are met with regard to their anti-degradation policy for groundwater.

Management of groundwater quality is an essential activity of the Watermaster due to the potential impact to each party's ability to utilize its water right.

Groundwater quality management of the basin consists of characterizing areas of groundwater contamination and its movement. The Watermaster coordinates with various agencies and parties to ensure that basin groundwater quality is protected and managed through activities that include, but are not limited to, the following:

- Investigation of sources of contamination.
- Periodic sampling and analysis of wells to monitor groundwater quality.

- Periodic measurement of groundwater elevations in wells to determine groundwater gradients and flow directions in the basin.
- Evaluation of groundwater gradients and flow directions to assess basin response to pumping and spreading activities.
- Reporting of current and projected pumping and spreading activities.
- Computer model simulations of projected pumping and spreading activities to assess the basin response to future operations.
- Review and evaluation of the effectiveness of the groundwater basin remediation projects to contain and remove contaminant plumes from the basin with a pump-and-treat technology.
- Review and evaluation of the effects of projects involving the spreading of reclaimed water to recharge the basin.
- Review and evaluation of proposed conjunctive use projects involving the spreading, storage, and future extraction of imported supplies.

5.1 COORDINATED RESPONSE FOR GROUNDWATER CLEANUP AND CONTROL

The Watermaster and the ULARA Administrative Committee (representing all parties within the ULARA) affirm their commitment to participate in a coordinated response to cleanup and control the spread of existing contamination of groundwater supplies within the SFB.

The ULARA Administrative Committee designates the Watermaster as the entity to coordinate party and non-party involvement in the effort to preserve and restore the quality of groundwater within ULARA. This anticipates that new or significantly increased extractions from existing SFB well fields to meet water supply demands may

include blending or treatment of groundwaters removed from areas of high-level degradation or contamination.

The Watermaster will also coordinate with other agencies for the following purposes:

- RWQCB

To investigate sources or potential sources of groundwater contamination and to regulate surface water discharges including the spreading of reclaimed water to increase the water recharge to groundwater basins.

- California Department of Toxic Substance Control (DTSC)

To investigate sources or potential sources of groundwater contamination.

- U. S. Environmental Protection Agency (EPA)

To develop groundwater remediation projects and to conduct independent groundwater investigations.

- California Department of Health Services (DHS)

To regulate groundwater production wells and treatment plants that produce a potable water supply for distribution by the water purveyor.

An important part of exercising these additional responsibilities and coordinating responses to contamination of the SFB water supplies is the collection, compilation and evaluation of essential data from producers within ULARA along with the distribution of such data to the proper state and federal agencies for review and comment.

5.2 WELLS

Each party or non-party shall provide to the Watermaster, for review and comment, plans and drawings for the following:

- Construction of any new well or well field.
- Deepening of any existing well.
- Modification of the perforations of the casing of any existing well.
- Plans for increasing or decreasing the effective extraction capacity of any existing well.
- Abandonment of any existing well.
- Data and other information that will enable the ULARA Watermaster to evaluate the potential impacts on groundwater pollution containment and cleanup.

These items will be reviewed by the Watermaster and evaluated as to whether significant adverse groundwater contaminant migration would be anticipated and to recommend alternatives as may be needed.

Factors and data included in the evaluation and modeling procedure may include the following:

- Groundwater quality data (i.e., historical and present).
- Water table elevations.
- Analysis of groundwater contaminant migration and flow patterns based on changes involving new wells, increased extraction, etc.

5.3 OPERATING PRINCIPLES - SAN FERNANDO BASIN

Any plans for new or significantly increased extraction by a producer in the SFB to meet water supply needs shall be submitted to the Watermaster for review and comment. The

proposed extraction activity will be evaluated to the extent feasible against good basin management objectives for maintaining and improving water quality, while operating the basin for water supply purposes.

The San Fernando Basin Groundwater Flow Model (Flow Model), developed as a part of the Remedial Investigation of Groundwater Contamination in the San Fernando Valley (RI), dated December 1992, will be utilized to evaluate that such new or increased extractions will not contribute significantly to the spread of groundwater contaminants. The evaluation will be completed using the Flow Model, which will be updated as new data and new modeling procedures become available. The accuracy of the Flow Model over time in predicting groundwater gradient patterns and the possible associated migration of contaminants will be discussed with the RWQCB and other interested agencies as needed, when requested.

5.4 GROUNDWATER PUMPING AND SPREADING PLAN FOR THE UPPER LOS ANGELES RIVER AREA

To assess the basin response to pumping and spreading operations by all the parties with regard to contaminant migration, all parties and non-parties who pump groundwater are required to submit annual reports by May 1 to the Watermaster that are include the following:

- A 5-year projection of annual groundwater pumping rates and volumes.
- A 5-year projection of annual spreading rates and volumes.
- The most recent water quality data for each well.

After receiving the aforementioned annual reports, the Watermaster will prepare the annual Groundwater Pumping

and Spreading Plan for the Upper Los Angeles River Area (Pumping and Spreading Plan) by July 1. The intent of this plan is for the Watermaster to look into the future and evaluate the impact from the projected pumping and spreading by all the ULARA parties as it relates to the implementation of the Judgment, and to make recommendations for inclusion into the Pumping and Spreading Plan. The ULARA Administrative Committee will review and approve the final report prior to its release. This annual Pumping and Spreading Plan will be made available to the RWQCB and other interested agencies.

The Pumping and Spreading Plan provides a yearly assessment of the basin response to the 5-year basin operation by all parties and non-parties with regard to changes in groundwater quality. The data and projections provided by the parties and non-parties are used as data input for the Flow Model to perform the simulations that are used to evaluate the basin response.

In reviewing the assessment, the Watermaster may include recommendations regarding projected operations in the Pumping and Spreading report and advise the applicable parties and non-parties of the recommendations.

The following information and data should be considered in developing the Watermaster's Pumping and Spreading Plan:

- Ownership, location and construction details for relevant wells, both active and inactive.
- Capacity of producing wells, 5-year projected pumping volumes, and a monitoring program.

- The name and location of each groundwater producer's wells operated during the previous water year (as reported in the Annual Watermaster Service in the Upper Los Angeles Area Report - filed on May 1 of each year in the California Superior Court).
- The quantity data for groundwater pumped from each well.
- If available, chemical analysis for all groundwater in wells tested during the previous water year, including data for volatile organic compounds (VOCs).
- Groundwater level data for wells monitored during the previous water year.
- An annual status report on production wells as to pumping during the previous water year.
- Significant changes in groundwater pumping during the previous water year, including resulting water level changes (as provided in the ULARA Watermaster's Annual Report).
- A summary of groundwater treatment plant operations and amounts of groundwater treated.
- Planned construction and a time schedule for new water supply and monitoring wells, if any.
- Planned modifications and a time schedule for modification or abandonment of existing wells, if any.
- Planned groundwater treatment facilities and construction time schedule.
- Maps showing locations of existing and proposed wells, treatment and water supply distribution systems.

5.5 GROUNDWATER TREATMENT FACILITIES

As permanent groundwater treatment facilities provide for increased pumping capacity in the ULARA, all pumping is to be conducted under the basin objectives of safe yield operation - to preserve a long-term balance of inflow and outflow and to preserve the groundwater storage credits of the parties. Thus, the Watermaster is required to account for all cleanup groundwater, the amount pumped, and its use or disposition. Groundwater consumptively used or discharged from ULARA by a party or non-party must be charged to a party's pumping right. Also, if the treated groundwater is returned to groundwater storage, the initial pumping of the groundwater would be considered non-consumptive, and not charged to a party's entitlement. However, in the event that this does not restore a party's pumping, returning groundwater to storage or discharging the groundwater to a storm drain is not consistent with the intent of the Judgment, and the Watermaster will not approve it.

5.5.1 TREATED GROUNDWATER DELIVERED FOR CONSUMPTIVE USE

If the treated groundwater is delivered for direct consumptive use, either on site or off site, the cleanup pumper must establish an agreement with the Watermaster and the party whose pumping rights may be affected to ensure that all potentially impacted parties are made whole. If the groundwater is used on site, the cleanup pumper would be required to financially compensate the party whose pumping right is affected. If the treated groundwater is used off site, an agreement would have to be established between the cleanup pumper and the water purveyor responsible for supplying water to that area.

5.5.2 TREATED WATER DISCHARGED TO A STORM DRAIN

If the treated groundwater is discharged to a storm drain, it is presumed wasted from the ULARA as surface flow. Before such a method of disposal will be considered, the cleanup pumper would have to receive approval from the Watermaster and secure an agreement with the party with water rights within the ULARA in which the treated groundwater is delivered for consumptive use. Also, the approval of the Los Angeles Regional Water Quality Control Board would be required to discharge the treated groundwater to the storm drain.

5.5.3 MONTHLY REPORTING OF METERED AMOUNTS

Consistent with Section 6.0 of these Policies and Procedures, each cleanup pumper is required to report monthly to the ULARA Watermaster the metered amounts of the following:

- Groundwater pumped.
- Treated groundwater returned to groundwater storage by re-injection.
- Treated groundwater discharged to the storm drains or elsewhere.
- Treated groundwater delivered for direct consumptive use.
- The amounts of water spread in spreading facilities.

5.5.4 NOTIFICATION OF PROPOSED GROUNDWATER TREATMENT FACILITIES

During the initial stages of planning all parties and nonparties will notify the Watermaster of their intent to construct any facility to remove

volatile organic compounds (VOCs) or any other contaminant from groundwater produced from the SFV. This notice will include the following information:

- The intended location and a description of the facility (type of treatment).
- The capacity in gallons per minute.
- The expected concentration of all identified contaminants in the groundwater to be treated.
- The intended disposition of all water to be treated.
- The expected start-up date and potential period of time over which the treatment facility will operate.

All operators of treatment facilities for wells in the ULARA will report to the Watermaster, annually, the following information:

- Name (or other designation) of the treatment facility;
- Type of treatment;
- Quantity of groundwater treated during the year;
- Quality of groundwater before treatment, and after treatment, ie., influent quality and effluent quality, at the beginning and at the end of the reporting period and/or treatment process;
- Proposed disposal of treated groundwater;
- Quantities of contaminants removed from the groundwater during the year; and
- Record any correction or modification made to the extraction and treatment system.

6.0 ULARA WATERMASTER AND ADMINISTRATIVE COMMITTEE RULES

6.1 FUNCTION AND PURPOSE OF ADMINISTRATIVE COMMITTEE

An Administrative Committee composed of representatives from the five major parties has been formed to advise with, request, consent to, and review actions of the ULARA Watermaster. In performing said functions, the ULARA Administrative Committee shall be consulted by the ULARA Watermaster and shall approve all discretionary ULARA Watermaster determinations. In the event of disagreement between the ULARA Watermaster and the ULARA Administrative Committee, the matter shall be submitted to the Court for review and resolution.

6.2 MEMBERSHIP OF ADMINISTRATIVE COMMITTEE

6.2.1 MEMBERSHIP

Members of the ULARA Administrative Committee shall be designated in writing and filed with the ULARA Watermaster by each party having a right to extract groundwater from the ULARA. The ULARA Watermaster shall maintain and periodically circulate a list of all ULARA Administrative Committee members, the party represented, and the appropriate names, addresses and telephone numbers of ULARA Participants for purposes of notice or other communication.

6.2.2 ALTERNATES

Any appointing party may designate an alternate to act on the ULARA Administrative Committee in the absence of the regular member.

6.2.3 TERM

Each member or alternate of the ULARA Administrative Committee shall serve at the will of the appointing party and may be removed or replaced by a written notice from such party to the ULARA Watermaster.

6.2.4 NONPARTICIPATION

Any eligible party may, by written advice to the ULARA Watermaster, elect not to participate in the ULARA Administrative Committee. While such election not to participate is in effect, such party shall not participate in any vote affecting the basin or basins in which it has a right. Such nonparticipation shall not prejudice or impair the rights of such party under the ULARA Judgment.

6.3 OFFICERS OF ADMINISTRATIVE COMMITTEE

6.3.1 OFFICERS AND DUTIES

The ULARA Administrative Committee shall elect at its annual April meeting, from its membership, a chairman and vice chairman. The ULARA Watermaster shall act as secretary. Said officers shall perform the duties usual to their office.

6.4 MEETINGS OF THE ADMINISTRATIVE COMMITTEE

6.4.1 ANNUAL MEETING

An Annual April Meeting of the ULARA Administrative Committee shall be held at the ULARA Watermaster's offices at 9:30 a.m. in April of each year or at such other convenient time as may be set by the ULARA Watermaster. At such meeting, the agenda

shall include election of officers and approval of the ULARA Watermaster Report.

6.4.2 MONTHLY MEETINGS

Monthly meetings shall be held at the call of the ULARA Watermaster, at a time and place designated in the call. Fifteen days' notice by FAX or in writing shall be given of any such monthly meeting and shall contain a proposed agenda describing the monthly meeting. No ULARA Watermaster discretionary action shall be authorized or approved at such meeting except as to agenda items set forth in the notice of such meeting.

6.4.3 WAIVER OF NOTICE

Notice of meeting may be waived in writing by each member entitled to act on matters considered thereat, and in such event, said meeting shall be valid as though duly noticed.

6.4.4 VOTING AND ACTION

Each member of the ULARA Administrative Committee, or his alternate in event of his absence, shall have one vote. Action of the ULARA Administrative Committee shall be by unanimous vote of the members who represent the five major parties in the basin or basins affected by such action (Section 8.3.2 of the Judgment). The following parties shall be deemed affected by actions in the respective basins:

Los Angeles

San Fernando, Sylmar, and Eagle Rock Basins

Glendale

San Fernando and Verdugo Basins

Burbank

San Fernando Basin

San Fernando

Sylmar Basin

Crescenta Valley

Verdugo Basin

Santiago Estates (formerly Meurer Engineering) Sylmar Basin - Meuer Engineering notified the Watermaster that they would relinquish participation in the ULARA Administrative Committee, and thus their voting right.

6.4.5 ACTION WITHOUT MEETING

Any action which could be taken at a meeting of the ULARA Administrative Committee may be taken without a meeting if assent thereto in writing is executed by all parties entitled to vote on such matters and said assent is filed with the ULARA Watermaster.

6.5 ULARA WATERMASTER RULES AND GUIDELINES

The "Policies and Procedures of the ULARA Watermaster" serve as the rules and guidelines of the Watermaster in protecting the groundwater basins of ULARA.

7.0 REPORTS TO THE ULARA WATERMASTER

7.1 MONTHLY REPORTS

7.1.1 FORM OF REPORTS

The ULARA Watermaster will provide to each party and non-party producing groundwater, current Monthly Water Production Report forms (refer to sample of forms in Appendix B herein).

7.1.2 SPECIFICATIONS IN REPORT

Those receiving such Monthly Water Production Report shall list extractions, by individual wells, for the full calendar month. To the extent that any party and non-party shall have optional bases for extractions, such report shall designate the category of water to which the ULARA Watermaster is to charge or credit each such extraction. Such categories may include "import return water"; "native waters"; "physical solution water"; "stored water"; (in the case of Los Angeles) "underlying Pueblo water"; "dewatering pumping"; and "pumping for groundwater cleanup".

7.1.3 CHANGE IN WELL STATUS

Any changes in well status (water wells drilled, capped, destroyed, or wells having meter problems) shall be noted on said Monthly Water Production Reports.

7.1.4 FILING AND COPIES

Each party and non-party extracting groundwater shall file its Monthly Water Production Report with the ULARA Watermaster. Each private party and non-party extracting groundwater under the physical solution (including nonconsumptive water users in the SFB) and pumping for groundwater cleanup, shall file its Monthly Production Reports with the ULARA Watermaster, and furnish a copy of the report to the appropriate City (Los Angeles, Burbank or

Glendale) chargeable for such water use. All of the Monthly Reports shall be filed on or before the 15th of the month following.

7.2 SEMIANNUAL REPORTS WATER LEVEL MEASUREMENTS

Semiannual water level measurements of all wells shall be taken by each party, during the months April and October of each year, and shall be reported to the ULARA Watermaster in following June and December. Monthly and bi-monthly water level measurements should be made by parties and non-parties (as needed), dealing with groundwater cleanup in the San Fernando Basin. Other items may be added to these reports at the discretion of the ULARA Watermaster.

7.3 ANNUAL REPORTS

Each party shall file an Annual Report with the ULARA Watermaster on or before February 15 for the preceding Water Year. Said annual reports shall contain aggregate reports for such party by months, separately for each basin, showing:

- Delivered Water.
- Total Amount of Reclaimed Water Treated.
- Total Amount of Reclaimed Water Delivered for Use.
- Imported Water.
- Exported Water.
- Sewage Exported.
- Other items of Data (Inflow and outflow to the basins of ULARA).

8.0. REPORTS BY THE ULARA WATERMASTER

8.1 MONTHLY REPORTS - ULARA WATERMASTER

8.1.1 ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PARTIES

The ULARA Watermaster shall provide to each party having extraction rights, a Monthly ULARA Watermaster Report (refer to attached forms - Appendix B) showing the production for the previous month, and the cumulative production for the water year for each well, and an accounting for each water account (safe yield water, stored water, and physical solution water) showing the amount of pumping credit, debit, and the balance available for extraction.

8.1.2 ULARA WATERMASTER SHALL PROVIDE MONTHLY REPORTS TO PRIVATE PARTIES AND NON-PARTIES

The ULARA Watermaster shall provide to each private party and nonparty extracting groundwater under the physical solution, nonconsumptive water users, and groundwater pumbers dealing with groundwater contamination in the SFB a monthly report (Attached Form W/M-2) and furnish a copy of such reports to the appropriate City (Los Angeles, Burbank, or Glendale) held chargeable for such water use.

8.2 ANNUAL REPORTS - ULARA Watermaster

8.2.1 ULARA WATERMASTER SHALL PROVIDE AN ANNUAL REPORT

The ULARA Watermaster shall, on or about May 1 of each year, prepare and provide each party and the Los Angeles Superior Court with an Annual ULARA Watermaster Report for the preceding water year on hydrologic conditions and ULARA Watermaster activities. This report shall contain data and information on the following items:

Water Supply, Operations, and Hydrologic Conditions

- Precipitation.
- Runoff and Outflow from ULARA.
- Components of Surface Flow.
- Groundwater Recharge.
- Groundwater Extractions.
- Imports and Exports of Water.
- Water Reclamation.
- Water Level Elevations.
- Groundwater Storage.
- Water Supply and Disposal - Basin.
- Extraction Rights and Stored Water Credit - Basin Summaries.

Water Quality, Treatment, and Remedial Investigation Activities

- Water Quality.
- Groundwater Quality Management Plan.
- Underground Tanks, Sumps, and Pipelines.
- Private Sewage Disposal Systems (PSDS).
- Landfills.
- San Fernando Valley Remedial Investigation.
- (RI) and Related Activities.
- Water Treatment.
- Groundwater Quality Investigations.

Ownership and Location of New Wells

8.2.2 DRAFT ANNUAL REPORT TO ULARA ADMINISTRATIVE COMMITTEE

The ULARA Administrative Committee members shall receive draft copies on or about March 15 to assure review and approval of the Annual ULARA Watermaster Report prior to its release.

8.2.3 DRAFT ANNUAL GROUNDWATER PUMPING AND SPREADING PLAN
TO ULARA ADMINISTRATIVE COMMITTEE

The ULARA Administrative Committee members shall receive draft copies on or about June 15 to assure review and approval of the Annual ULARA Groundwater Pumping and Spreading Plan prior to its release.

8.2.4 DATA FOR INVOICE OF PHYSICAL SOLUTION AND
GROUNDWATER CLEANUP WATER

The ULARA Watermaster shall, at the end of each water year, prepare and forward data sufficient for invoicing all physical solution and groundwater cleanup water extracted.

9.0 INFORMATION AVAILABLE RELATED TO PUMPING AND BASIN
MANAGEMENT - SAN FERNANDO VALLEY

As a part of each City's or agency's (Los Angeles, Glendale, Burbank, San Fernando and CVWD) water utility activities, three categories of information are available and will be made available to the LARWQCB and other interested agencies related to groundwater pumping and basin management, upon request. These categories include: basic data, review documents and additional items of information. A listing of the type of information included is as follows:

9.1 BASIC DATA - SAN FERNANDO VALLEY

- Water quality data.
- Groundwater Pumping - assigned water rights and physical solutions rights.
- Reclaimed water use and general operation data.
- Five-year proposed plans for pumping.
- Capital plans - production and treatment.
- Information on projected spreading projects.

9.2 REVIEW DOCUMENTS - SAN FERNANDO VALLEY

- All California Environmental Quality Act (CEQA) documents should be available to the ULARA Watermaster and the LARWQCB, and other interested agencies.
- Plans that parties and non-parties have for groundwater production regarding capital projects, included should be alternatives considered in addition to the recommended projects.
- Fact sheets regarding project costs and time schedules.
- Special studies made - aquifer tests and water quality evaluation.
- All other data and information provided to ULARA Watermaster.

9.3 ADDITIONAL ITEMS OF INFORMATION - SAN FERNANDO VALLEY

- ULARA Watermaster reports dealing with groundwater production and the impact on the various basins through evaluation and/or modeling. This would include anticipated water level and groundwater quality changes.
- All reports and documents related to the implementation of projects should be made available for review to the LARWQCB and other interested parties.
- Annual ULARA Watermaster Report (May 1 - each year).
- ULARA Watermaster meeting announcements and recorded minutes.
- Other special reports of the ULARA Watermaster and Parties related to pumping activities should be made available for review to the LARWQCB and other interested parties.

MLB :ptk

A:WM-P&P.MLB

A:WM-P&P.TOC

A:WM-P&P.DIV

A:WM-P&P.RPT

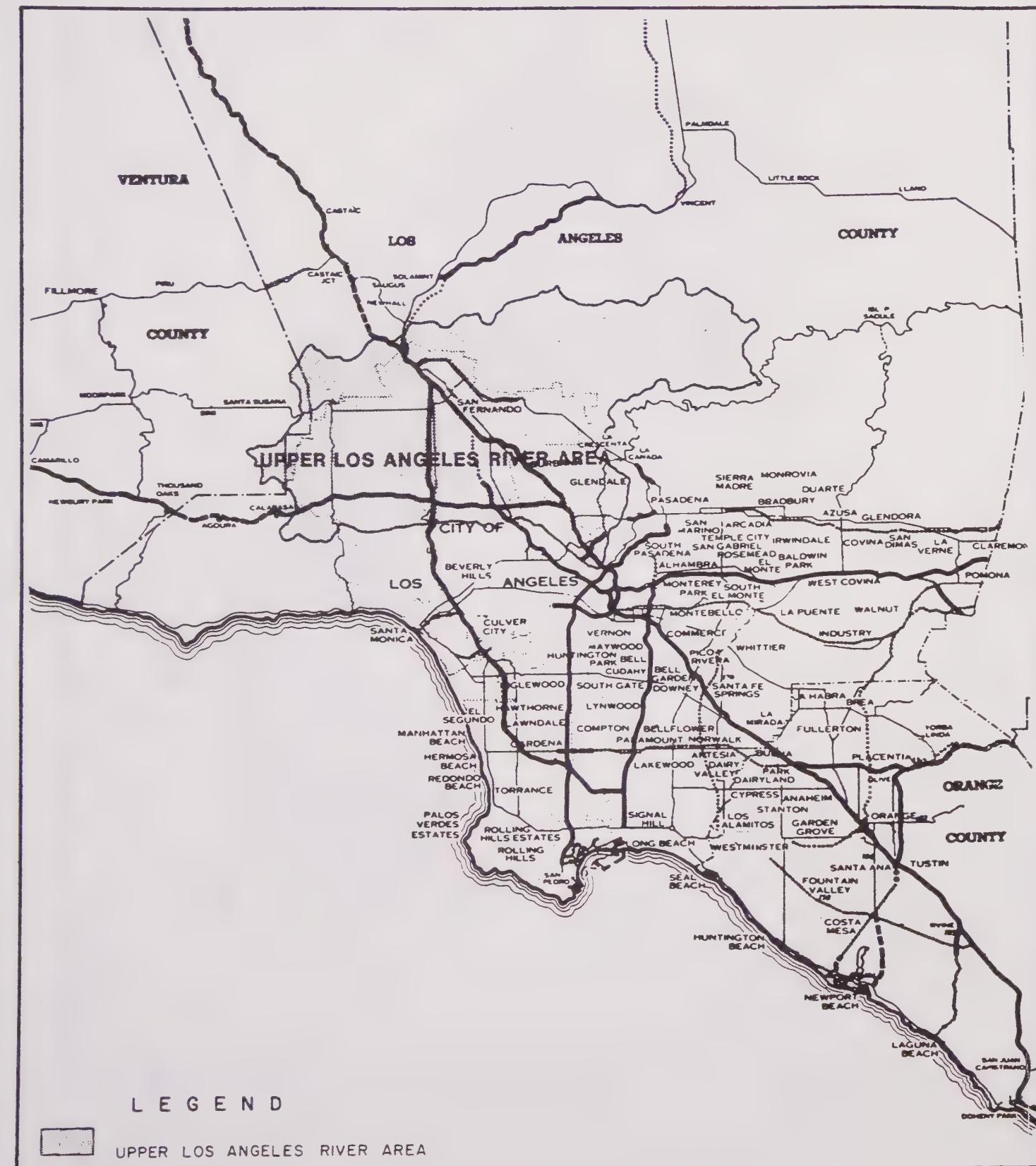
2/10/98

APPENDIX A

MAPS OF ULARA

PUBLIC AGENCY WATER SERVICE AREAS

AND PRIVATE PARTIES

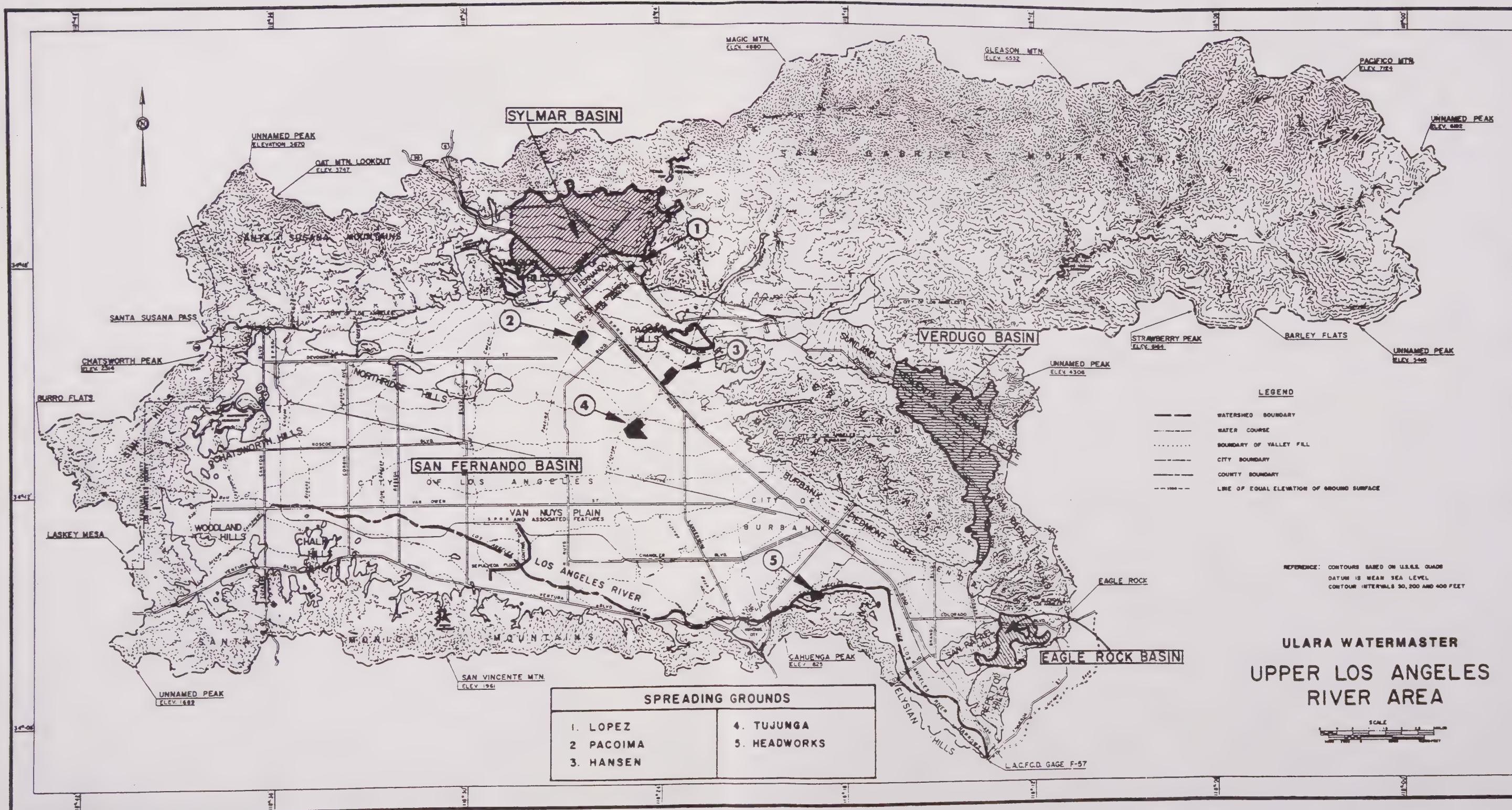


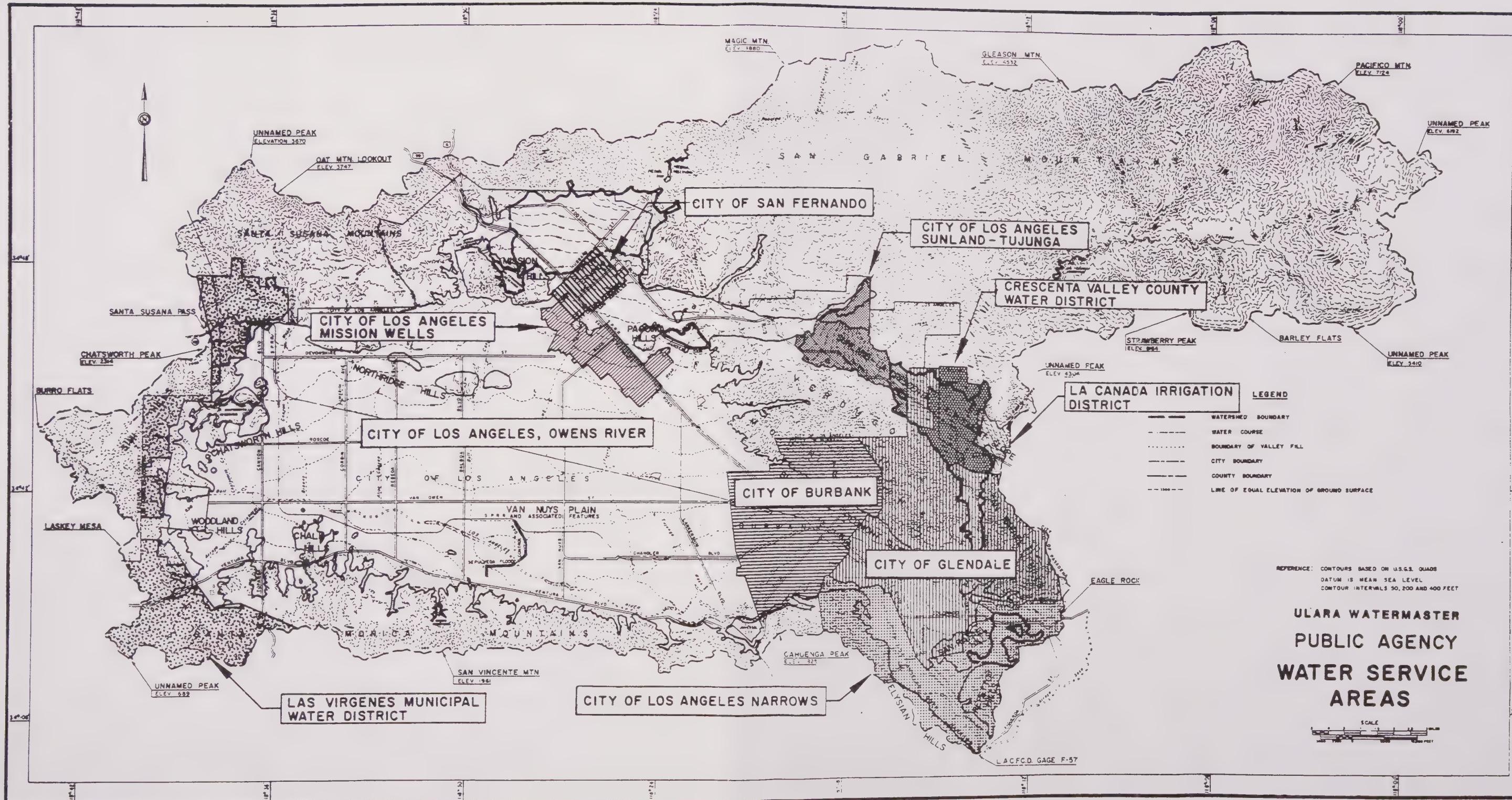
VICINITY MAP

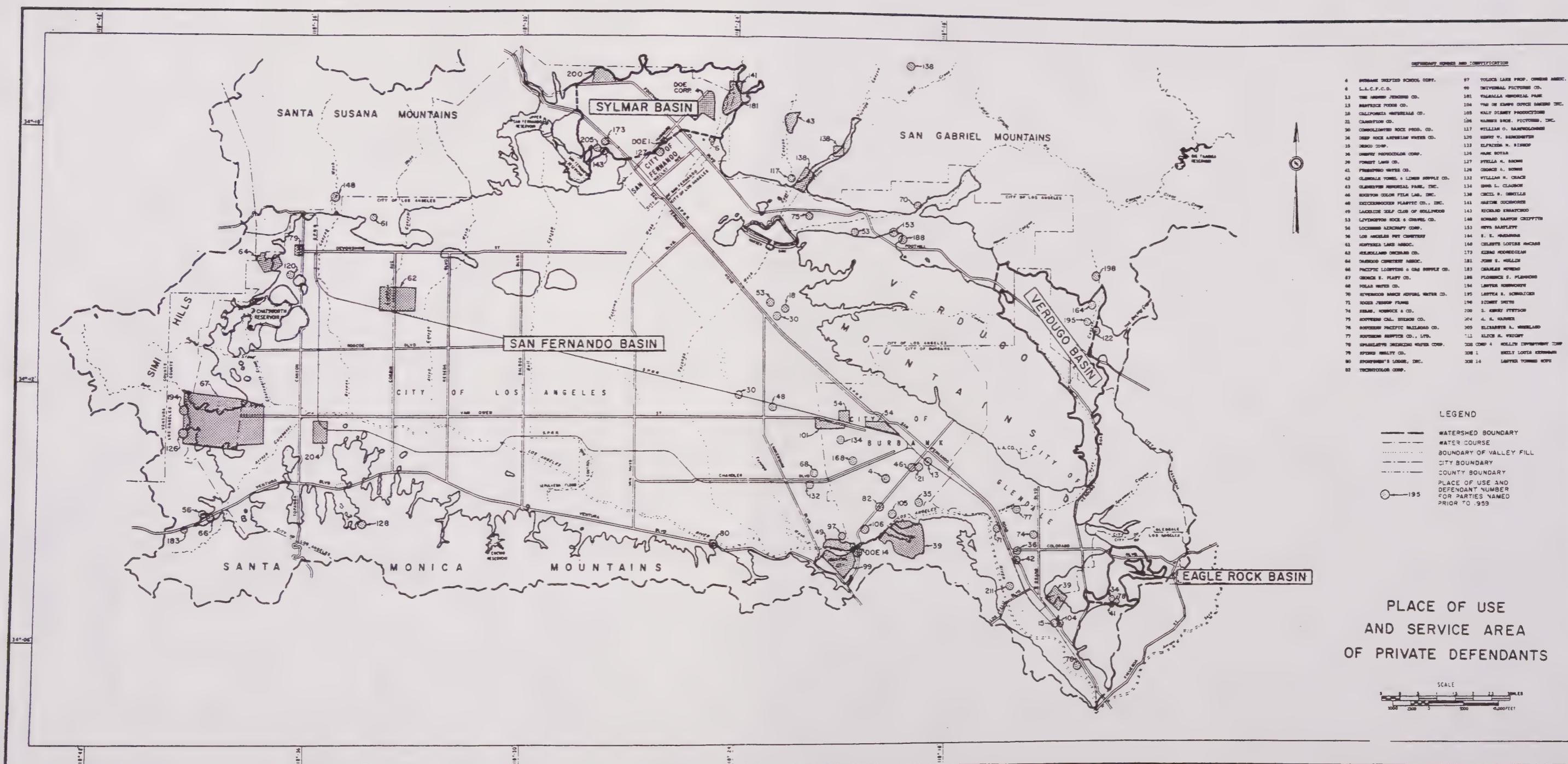
SCALE

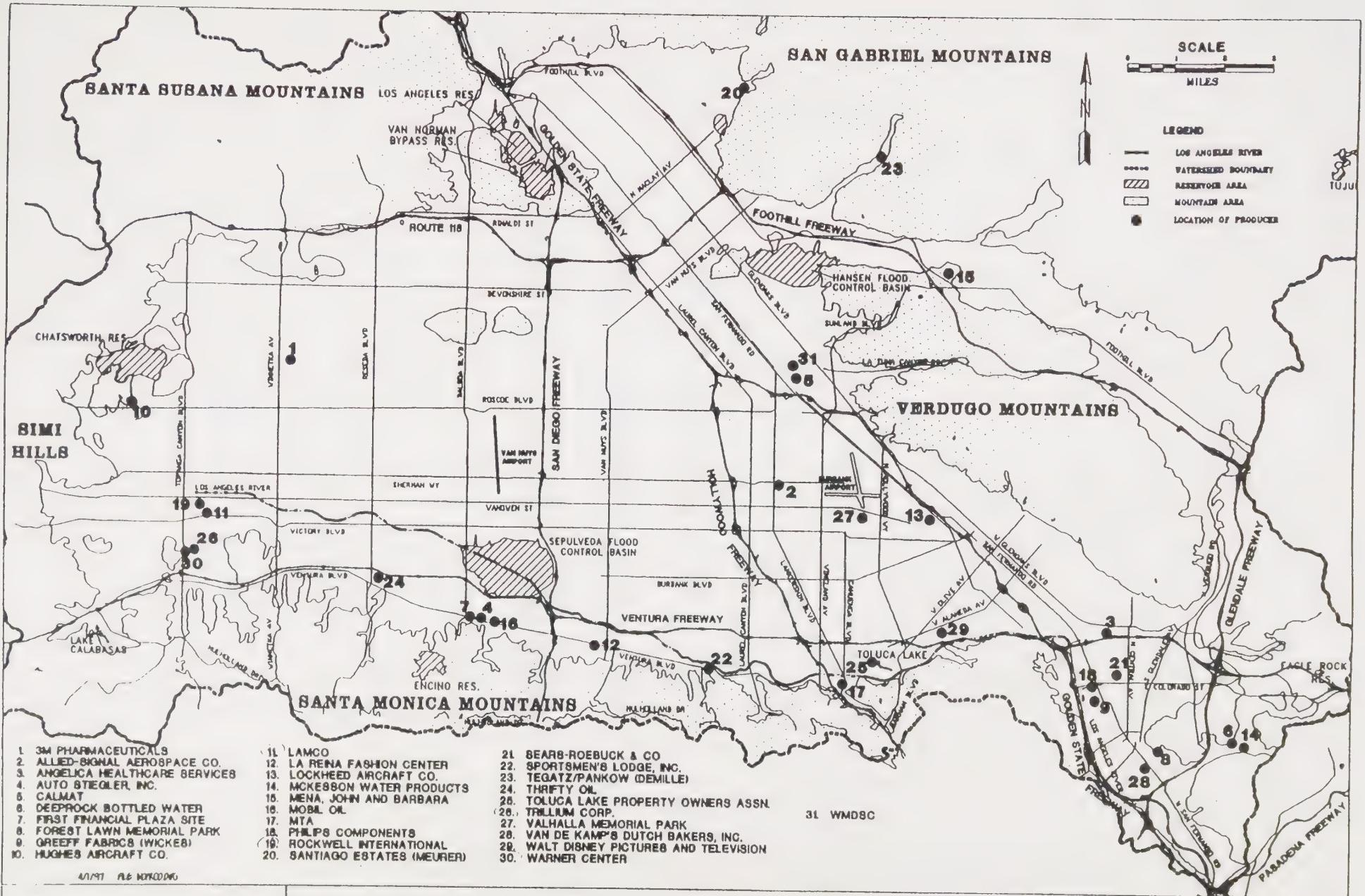
0 5 10 15 Miles











APPENDIX B

WATER PRODUCTION REPORTS -

MONTHLY - ACCUMULATIVE - AND

ULARA WATERMASTER ACCOUNTS

ULA WATERMASTER SERVICE ARE.
 P.O. Box 111 — Los Angeles, Calif. 90051
MONTHLY WATER PRODUCTION REPORT*

Basin: SAN FERNANDO

Party: CITY OF BURBANK

Well Field: _____

Report for month
of August 19 97

Owner No. (1)	LACFCD No. (2)	Water Meter Readings (3)	No. of Meter Turn-overs (4)	Units (5)	Conversion Factor (6)	Ac-Ft (7)
6A	3841C	End <u>382,714</u> Begin <u>382,714</u> Diff. <u>0</u>		1000 FT ³	.02296	<u>0</u>
7	3882P	End <u>848,953</u> Begin <u>839,205</u> Diff. <u>9,748</u>		100 FT ³	.002296 .003069	<u>29.92</u>
9	3851B	End _____ Begin _____ Diff. <u>SAMPLE</u>		100 FT ³	.002296	
10R	3851C	End <u>334,004</u> Begin <u>334,004</u> Diff. <u>0</u>		100 FT ³	.002296	<u>0</u>
11A	3851J	End <u>582,138</u> Begin <u>582,138</u> Diff. <u>0</u>		100 FT ³	.002296	<u>0</u>
12	3851E	End <u>536,083</u> Begin <u>536,088</u> Diff. <u>5</u>		100 FT ³	.002296	<u>0</u>
13A	3851K	End <u>444,898</u> Begin <u>444,898</u> Diff. <u>0</u>		100 FT ³	.002296	<u>0</u>

Grand - TOTAL 58.07

Remarks: _____

Please fill in this report on the last day of the month and mail the original to Mr. Melvin Blevins, Watermaster, at the above address.

APPROVED BY Lead Rantz
 DATE: 9/5/97

**ULARA WATERMASTER SERVICE
SAN FERNANDO BASIN**

**MONTHLY AND ACCUMULATIVE WATER PRODUCTION SUMMARY
1996-97 WATER YEAR**

Month	Owner Well No.	LACFCD Well No.	End of Month Read (cubic feet x 100)*	Production for Month (cubic feet x 100)*	Conversion Factor to acre-feet	Production	
						Monthly (acre-feet)	Annual (acre-feet)
Jun-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	795,235	24,898	3.07E-03	76.41	669.27
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,378,500	26,418	3.07E-03	81.08	451.89
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						157.49	1,121.16
Jul-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	839,205	43,970	3.07E-03	134.94	804.21
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,418,144	39,644	3.07E-03	121.67	573.56
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						256.61	1,377.77
Aug-97	6A	3841C	382,714	0	2.30E-02	0.00	0.00
	7	3882P	848,953	9,748	3.07E-03	29.92	834.13
	10R	3851C	334,004	0	2.30E-03	0.00	0.00
	11A	3851J	582,138	0	2.30E-03	0.00	0.00
	12	3851E	536,088	0	2.30E-03	0.00	0.00
	13A	3851K	444,898	0	2.30E-03	0.00	0.00
	14A	3850K	154,846	0	2.30E-03	0.00	0.00
	15	3882T	1,427,316	9,172	3.07E-03	28.15	601.71
	17	3841F	271,297	0	2.30E-03	0.00	0.00
	18	3841G	627,559	0	2.30E-03	0.00	0.00
Total:						58.07	1,435.84

* Well 6A reads in cubic feet x 1000, and Wells 7 and 15 read in gallons x 1000

ULARA WATERMASTER SERVICE SAN FERNANDO BASIN														
SUMMARY OF PUMPING ACTIVITIES 1996-97 WATER YEAR														
Party:		City of Burbank												
164 West Magnolia Blvd.														
Burbank, CA 91503														
Possible Scenarios For Burbank Water						First		Second		***		Third		
Date	City of Burbank	Lockheed Burbank OU	Valhalla	Operation Loss Basin Account	Subtotal	Import Return* (acre-feet)			Stored Water Credit** (acre-feet)			Physical Solution Water (acre-feet)		
Oct-96	185.49	143.59	13.23	-143.59	198.72	Credit	Debit	Balance	Credit	Debit	Balance	Credit	Debit	Balance
	****					4,625.00	198.72	4,426.28	61,415.00		61,415.00	4,200.00	-----	4,200.00
Nov-96	202.98	373.07	12.66	-127	461.71	4,426.28	461.71	3,964.57	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00

Dec-96	176.29	650.82	4.21	0.00	831.32	3,964.57	831.32	3,133.25	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Jan-97	111.04	587.70	0.00	0.00	698.74	3,133.25	698.74	2,434.51	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Feb-97	0.00	823.97	1.55	0.00	825.52	2,434.17	825.52	1,608.99	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Mar-97	0.00	912.93	38.90	0.00	951.83	1,608.99	951.83	657.16	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Apr-97	28.27	1013.60	18.69	0.00	1,060.56	657.16	1,060.56	-403.40	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
May-97	259.60	950.37	47.79	0.00	1,257.76	-403.40	1,257.76	-1,661.16	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Jun-97	157.49	1000.99	51.42	0.00	1,209.90	-1,661.16	1,209.90	-2,871.06	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Jul-97	256.61	1026.68	51.42	0.00	1,334.71	-2,871.06	1,334.71	-4,205.77	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Aug-97	58.07	1049.94	51.42	0.00	1,159.43	-4,205.77	1,159.43	-5,365.20	61,415.00	-----	61,415.00	4,200.00	-----	4,200.00
Sep-97	239.25	1017.40	51.42	0.00	1,308.07	-5,365.20	1,308.07	-6,673.27	61,415.00			4,200.00		4,200.00
Total	1675.09	9551.06	342.71	-270.59	11,298.27									

* Extraction Right for the 96-97 Water Year.

** As of October 1, 1996.

*** Option Stored Water Credit or Physical Solution Water

**** Development Water 10/96 total amount pumped 143.59, 11/96 partial amount pumped equals development water 127.0

APPENDIX C

ULARA JUDGMENT - JANUARY 26, 1979

SECTIONS 1 THROUGH 10

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES,)
)
Plaintiff,)
)
vs.)
)
CITY OF SAN FERNANDO, et al.,)
)
Defendants.)
)
)
)

NO. 650079

JUDGMENT

January 26, 1979

ORIGINAL FILED

JAN 26 1979

JOHN J. CORCORAN County Clerk

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES,)
)
)
 Plaintiff,)
)
)
 vs.)
)
)
CITY OF SAN FERNANDO, et al.,)
)
)
 Defendants.)
)

There follows by consecutive paging a Table of Contents (pages i. to vi.), Recitals (page 1), Definitions and List of Attachments (pages 1 to 6), Designation of Parties (page 6), Declaration re Geology and Hydrology (pages 6 to 12), Declaration of Rights (pages 12 to 21), Injunctions (pages 21 to 23), Continuing Jurisdiction (page 23), Watermaster (pages 23 to 29), Physical Solution (pages 29 to 34), and Miscellaneous Provisions (pages 34 to 35), and Attachments (pages 36 to 46). Each and all of said several parts constitute a single integrated Judgment herein.

TABLE OF CONTENTS

	<u>Page</u>
1. RECITALS	1
2. DEFINITIONS AND ATTACHMENTS	1
2.1 Definitions of Terms	1
2.2 List of Attachments	5
3. PARTIES	6
3.1 Defaulting and Disclaiming Defendants	6
3.2 No Rights Other Than as Herein Declared	6
4. DECLARATION RE GEOLOGY AND HYDROLOGY	6
4.1 Geology	6
4.1.1 ULARA	6
4.1.2 San Fernando Basin	7
4.1.3 Sylmar Basin	8
4.1.4 Verdugo Basin	8
4.1.5 Eagle Rock Basin	9
4.2 Hydrology	9
4.2.1 Water Supply	9
4.2.2 Ground Water Movement	9
4.2.3 Separate Ground Water Basins	10
4.2.4 Safe Yield and Native Safe Yield	11
4.2.5 Separate Basins -- Separate Rights	11
4.2.6 Hydrologic Condition of Basins	11
4.2.6.1 San Fernando Basin	11
4.2.6.2 Sylmar Basin	12
4.2.6.3 Verdugo Basin	12
4.2.6.4 Eagle Rock Basin	12
5. DECLARATION OF RIGHTS	12

	<u>Page</u>
1	
2	5.2.1.3 Calculation of Import Return
3	Water and Stored Water Credits 17
4	5.2.1.4 Cummulative Import Return
5	Water Credits 18
6	5.2.1.5 Overextractions 18
7	5.2.1.6 Private Defendant 18
8	5.2.2 Sylmar Basin Rights 19
9	5.2.2.1 Rights to Recapture Import
10	Return Waters 19
11	5.2.2.2 Rights to Store and Recapture
12	Stored Water 19
13	5.2.2.3 Carry Over 19
14	5.2.2.4 Private Defendants 20
15	5.2.3 Verdugo Basin Rights 20
16	5.2.3.1 Glendale and Crescenta Valley 20
17	5.2.3.2 Los Angeles 20
18	5.2.3.3 Private Defendants 20
19	5.2.4 Eagle Rock Basin Rights 20
20	5.2.4.1 Los Angeles 20
21	5.2.4.2 Private Defendants 21
22	6. INJUNCTIONS 21
23	6.1 Each and Every Defendant 21
24	6.2 Each and Every Private Defendant 21
25	6.3 Defaulting and Disclaiming Parties 21
26	6.4 Glendale 21
27	6.5 Burbank 22
28	6.6 San Fernando 22

	<u>Page</u>
1	
2	8.4 Watermaster Budget and Assessments 27
3	8.4.1 Watermaster's Proposed Budget 27
4	8.4.2 Objections and Review 28
5	8.4.3 Notice of Assessment 28
6	8.4.4 Payment 28
7	8.5 Review of Watermaster Activities 28
8	8.5.1 Review Procedures 28
9	8.5.1.1 Noticed Motion 28
10	8.5.1.2 De Novo Nature of Proceedings . . . 28
11	8.5.1.3 Decision 29
12	9. PHYSICAL SOLUTION 29
13	9.1 Circumstances Indicating Need for Physical Solution 29
14	9.2 Prior Stipulated Judgment 29
15	9.2.1 Eagle Rock Basin Parties 30
16	9.2.2 Non-Consumptive or Minimal-Consumptive
17	Operations 30
18	9.2.3 Abandoned Operations 31
19	9.3 Private Defendants 31
20	9.3.1 Private Defendants and Appropriation Ciliies 31
21	9.3.2 Reports and Accounting 32
22	9.3.3 Payment 32
23	9.3.3.1 Los Angeles 32
24	9.3.3.2 Glendale or Burbank 32
25	9.4 Glendale and Burbank 33
26	9.5 San Fernando 34
27	9.6 Effective Date 34
28	10. MISCELLANEOUS PROVISIONS 34

	<u>Page</u>
1 10.1 Designation of Address for Notice and Service	34
2 10.2 Notice of Change in Hydrologic Condition--	
3 Sylmar Basin	35
4 10.3 Judgment Binding on Successors	35
5 10.4 Costs	35
6	
7	
8 ATTACHMENTS	
9 "A" -- Map entitled "Upper Los Angeles River Area",	
10 showing separate basins therein	36
11 "B" -- List of "Dismissed Parties"	37
12 "C" -- List of "Defaulted Parties"	39
13 "D" -- List of "Disclaiming Parties"	41
14 "E" -- List of "Prior Stipulated Judgment"	42
15 "F" -- List of "Stipulated Non-consumptive or Minimal-	
16 consumptive Use Practices"	43
17 "G" -- Map entitled "Place of Use and Service Area of	
18 Private Defendants"	45
19 "H" -- Map entitled "Public Agency Water Service Areas" . .	46
20	
21	
22	
23	
24	
25	
26	
27	
28	

1 1. RECITALS

2 This matter was originally tried before the Honorable Edmund
3 M. Moor, without jury, commencing on March 1, 1966, and concluding
4 with entry of Findings, Conclusions and Judgment on March 14,
5 1968, after more than 181 trial days. Los Angeles appealed from
6 said judgment and the California Supreme Court, by unanimous
7 opinion, (14 Cal. 3d 199) reversed and remanded the case; after
8 trial of some remaining issues on remand, and consistent with the
9 opinion of the Supreme Court, and pursuant to stipulations, the
10 Court signed and filed Findings of Fact and Conclusions of Law.
11 Good cause thereby appearing,

12 IT IS ORDERED, ADJUDGED AND DECREED:

13
14 2. DEFINITIONS AND ATTACHMENTS

15 2.1 Definitions of Terms. As used in this Judgment, the
16 following terms shall have the meanings herein set forth:

17 [1] Basin or Ground Water Basin -- A subsurface geo-
18 logic formation with defined boundary conditions, containing
19 a ground water reservoir, which is capable of yielding a sig-
20 nificant quantity of ground water.

21 [2] Burbank -- Defendant City of Burbank.

22 [3] Crescenta Valley -- Defendant Crescenta Valley
23 County Water District.

24 [4] Colorado Aqueduct -- The aqueduct facilities and
25 system owned and operated by MWD for the importation of water
26 from the Colorado River to its service area.

27 [5] Deep Rock -- Defendant Evelyn M. Pendleton, dba
28 Deep Rock Artesian Water Company.

1 [6] Delivered Water -- Water utilized in a water supply
2 distribution system, including reclaimed water.

3 [7] Eagle Rock Basin -- The separate ground water basin
4 underlying the area shown as such on Attachment "A".

5 [8] Extract or Extraction -- To produce ground water,
6 or its production, by pumping or any other means.

7 [9] Fiscal Year -- July 1 through June 30 of the
8 following calendar year.

9 [10] Foremost -- Defendant Foremost Foods Company,
10 successor to defendant Sparkletts Drinking Water Corp.

11 [11] Forest Lawn -- Collectively, defendants Forest
12 Lawn Cemetery Association, Forest Lawn Company, Forest Lawn
13 Memorial-Park Association, and American Security and Fidelity
14 Corporation.

15 [12] Gage F-57 -- The surface stream gaging station
16 operated by Los Angeles County Flood Control District and
17 situated in Los Angeles Narrows immediately upstream from the
18 intersection of the Los Angeles River and Arroyo Seco, at
19 which point the surface outflow from ULARA is measured.

20 [13] Glendale -- Defendant City of Glendale.

21 [14] Ground Water -- Water beneath the surface of the
22 ground and within the zone of saturation.

23 [15] Hersch & Plumb -- Defendants David and Eleanor A.
24 Hersch and Gerald B. and Lucille Plumb, successors to
25 Wellesley and Duckworth defendants.

26 [16] Import Return Water -- Ground water derived from
27 percolation attributable to delivered imported water.

28 [17] Imported Water -- Water used within ULARA, which

1 is derived from sources outside said watershed. Said term
2 does not include inter-basin transfers wholly within ULARA.

3 [18] In Lieu Storage -- The act of accumulating ground
4 water in a basin by intentional reduction of extractions of
5 ground water which a party has a right to extract.

6 [19] Lockheed -- Defendant Lockheed Aircraft Corporation.

7 [20] Los Angeles -- Plaintiff City of Los Angeles,
8 acting by and through its Department of Water and Power.

9 [21] Los Angeles Narrows -- The physiographic area
10 northerly of Gage F-57 bounded on the east by the San Rafael
11 and Repetto Hills and on the west by the Elysian Hills,
12 through which all natural outflow of the San Fernando Basin
13 and the Los Angeles River flow en route to the Pacific Ocean.

14 [22] MWD -- The Metropolitan Water District of Southern
15 California, a public agency of the State of California.

16 [23] Native Safe Yield -- That portion of the safe
17 yield of a basin derived from native waters.

18 [24] Native Waters -- Surface and ground waters derived
19 from precipitation within ULARA.

20 [25] Overdraft -- A condition which exists when the
21 total annual extractions of ground water from a basin exceed
22 its safe yield, and when any temporary surplus has been
23 removed.

24 [26] Owens-Mono Aqueduct -- The aqueduct facilities
25 owned and operated by Los Angeles for importation to ULARA
26 water from the Owens River and Mono Basin watersheds easterly
27 of the Sierra-Nevada in Central California.

28 [27] Private Defendants -- Collectively, all of those

1 defendants who are parties, other than Glendale, Burbank, San
2 Fernando and Crescenta Valley.

3 [28] Reclaimed Water -- Water which, as a result of
4 processing of waste water, is made suitable for and used for
5 a controlled beneficial use.

6 [29] Regulatory Storage Capacity -- The volume of
7 storage capacity of San Fernando Basin which is required to
8 regulate the safe yield of the basin, without significant
9 loss, during any long-term base period of water supply.

10 [30] Rising Water -- The effluent from a ground water
11 basin which appears as surface flow.

12 [31] Rising Water Outflow -- The quantity of rising
13 water which occurs within a ground water basin and does not
14 rejoin the ground water body or is not captured prior to
15 flowing past a point of discharge from the basin.

16 [32] Safe Yield -- The maximum quantity of water which
17 can be extracted annually from a ground water basin under a
18 given set of cultural conditions and extraction patterns,
19 based on the long-term supply, without causing a continuing
20 reduction of water in storage.

21 [33] San Fernando -- Defendant City of San Fernando.

22 [34] San Fernando Basin -- The separate ground water
23 basin underlying the area shown as such on Attachment "A".

24 [35] Sportsman's Lodge -- Defendant Sportsman's Lodge
25 Banquet Association.

26 [36] Stored Water -- Ground water in a basin consisting
27 of either (1) imported or reclaimed water which is inten-
28 tionally spread, or (2) safe yield water which is allowed to

1 accumulate by In Lieu Storage. Said ground waters are dis-
2 tinguished and separately accounted for in a ground water
3 basin, notwithstanding that the same may be physically com-
4 mingled with other waters in the basin.

5 [37] Sylmar Basin -- The separate ground water basin
6 underlying the area indicated as such on Attachment "A".

7 [38] Temporary Surplus -- The amount of ground water
8 which would be required to be removed from a basin in order
9 to avoid waste under safe yield operation.

10 [39] Toluca Lake -- Defendant Toluca Lake Property
11 Owners Association.

12 [40] ULARA or Upper Los Angeles River Area -- The Upper
13 Los Angeles River watershed, being the surface drainage area
14 of the Los Angeles River tributary to Gage F-57.

15 [41] Underlying Pueblo Waters -- Native ground waters
16 in the San Fernando Basin which underlie safe yield and
17 stored waters.

18 [42] Valhalla -- Collectively, Valhalla Properties,
19 Valhalla Memorial Park, Valhalla Mausoleum Park.

20 [43] Van de Kamp -- Defendant Van de Kamp's Holland
21 Dutch Bakers, Inc.

22 [44] Verdugo Basin -- The separate ground water basin
23 underlying the area shown as such on Attachment "A".

24 [45] Water Year -- October 1 through September 30 of
25 the following calendar year.

26 Geographic Names, not herein specifically defined, are used to
27 refer to the places and locations thereof as shown on Attachment "A".

28 2.2 List of Attachments. There are attached hereto the .

1 following documents, which are by this reference incorporated in
2 this Judgment and specifically referred to in the text hereof:

3 "A" -- Map entitled "Upper Los Angeles River Area",
4 showing Separate Basins therein.

5 "B" -- List of "Dismissed Parties."

6 "C" -- List of "Defaulted Parties."

7 "D" -- List of "Disclaiming Parties."

8 "E" -- List of "Prior Stipulated Judgments."

9 "F" -- List of "Stipulated Non-Consumptive or Minimal-
10 Consumptive Use Practices."

11 "G" -- Map entitled "Place of Use and Service Area of
12 Private Defendants."

13 "H" -- Map entitled "Public Agency Water Service Areas."

14

15 3. PARTIES

16 3.1 Defaulting and Disclaiming Defendants. Each of the
17 defendants listed on Attachment "C" and Attachment "D" is without
18 any right, title or interest in, or to any claim to extract ground
19 water from ULARA or any of the separate ground water basins therein.

20 3.2 No Rights Other Than as Herein Declared. No party to
21 this action has any rights in or to the waters of ULARA except to
22 the extent declared herein.

23

24 4. DECLARATION RE GEOLOGY AND HYDROLOGY

25 4.1 Geology.

26 4.1.1 ULARA. ULARA (or Upper Los Angeles River Area),
27 is the watershed or surface drainage area tributary to the
28 Los Angeles River at Gage F-57. Said watershed contains a

1 total of 329,000 acres, consisting of approximately 123,000
2 acres of valley fill area and 206,000 acres of hill and
3 mountain area, located primarily in the County of Los Angeles,
4 with a small portion in the County of Ventura. Its boundaries
5 are shown on Attachment "A". The San Gabriel Mountains form
6 the northerly portion of the watershed, and from them two
7 major washes--the Pacoima and the Tujunga--discharge southerly.
8 Tujunga Wash traverses the valley fill in a southerly direc-
9 tion and joins the Los Angeles River, which follows an east-
10 erly course along the base of the Santa Monica Mountains
11 before it turns south through the Los Angeles Narrows. The
12 waters of Pacoima Wash as and when they flow out of Sylmar
13 Basin are tributary to San Fernando Basin. Lesser tributary
14 washes run from the Simi Hills and the Santa Susana Mountains
15 in the westerly portion of the watershed. Other minor washes,
16 including Verdugo Wash, drain the easterly portion of the
17 watershed which consists of the Verdugo Mountains, the Elysian,
18 San Rafael and Repetto Hills. Each of said washes is a non-
19 perennial stream whose flood flows and rising waters are
20 naturally tributary to the Los Angeles River. The Los Angeles
21 River within ULARA and most of said tributary natural washes
22 have been replaced, and in some instances relocated, by
23 concrete-lined flood control channels. There are 85.3 miles
24 of such channels within ULARA, 62% of which have lined con-
25 crete bottoms.

26 4.1.2 San Fernando Basin. San Fernando Basin is the
27 major ground water basin in ULARA. It underlies 112,047 acres
28 and is located in the area shown as such on Attachment "A".

1 Boundary conditions of the San Fernando Basin consist on the
2 east and northeast of alluvial contacts with non-waterbearing
3 series along the San Rafael Hills and Verdugo Mountains and
4 the Santa Susana Mountains and Simi Hills on the northwest and
5 west and the Santa Monica Mountains on the south. Water-
6 bearing material in said basin extends to at least 1000 feet
7 below the surface. Rising water outflow from the San Fernando
8 Basin passes its downstream and southerly boundary in the
9 vicinity of Gage F-57, which is located in Los Angeles Narrows
10 about 300 feet upstream from the Figueroa Street (Dayton
11 Street) Bridge. The San Fernando Basin is separated from the
12 Sylmar Basin on the north by the eroded south limb of the
13 Little Tujunga Syncline which causes a break in the ground
14 water surface of about 40 to 50 feet.

15 4.1.3 Sylmar Basin. Sylmar Basin underlies 5,565 acres
16 and is located in the area shown as such on Attachment "A".
17 Water-bearing material in said basin extends to depths in ex-
18 cess of 12,000 feet below the surface. Boundary conditions of
19 Sylmar Basin consist of the San Gabriel Mountains on the north
20 a topographic divide in the valley fill between the Mission
21 Hills and San Gabriel Mountains on the west, the Mission Hills
22 on the southwest, Upper Lopez Canyon Saugus Formation on the
23 east, along the east bank of Pacoima Wash, and the eroded
24 south limb of the Little Tujunga Syncline on the south.

25 4.1.4 Verdugo Basin. Verdugo Basin underlies 4,400 acres
26 and is located in the area shown as such on Attachment "A".
27 Boundary conditions of Verdugo Basin consist of the San
28 Gabriel Mountains on the north, the Verdugo Mountains on the

1 south and southwest, the San Rafael Hills on the southeast and
2 the topographic divide on the east between the drainage area
3 that is tributary to the Tujunga Wash to the west and Verdugo
4 Wash to the east, the ground water divide on the west between
5 Monk Hill-Raymond Basin and the Verdugo Basin on the east and
6 a submerged dam constructed at the mouth of Verdugo Canyon on
7 the south.

8 4.1.5 Eagle Rock Basin. Eagle Rock Basin underlies 807
9 acres and is located in the area shown as such on Attachment
10 "A". Boundary conditions of Eagle Rock Basin consist of the
11 San Rafael Hills on the north and west and the Repetto Hills
12 on the east and south with a small alluvial area to the
13 southeast consisting of a topographic divide.

14 4.2 Hydrology.

15 4.2.1 Water Supply. The water supply of ULARA consists
16 of native waters, derived from precipitation on the valley
17 floor and runoff from the hill and mountain areas, and of im-
18 ported water from outside the watershed. The major source of
19 imported water has been from the Owens-Mono Aqueduct, but
20 additional supplies have been and are now being imported
21 through MWD from its Colorado Aqueduct and the State Aqueduct.

22 4.2.2 Ground Water Movement. The major water-bearing
23 formation in ULARA is the valley fill material bounded by
24 hills and mountains which surround it. Topographically, the
25 valley-fill area has a generally uniform grade in a southerly
26 and easterly direction with the slope gradually decreasing
27 from the base of the hills and mountains to the surface
28 drainage outlet at Gage F-57. The valley fill material is a

1 heterogeneous mixture of clays, silts, sand and gravel laid
2 down as alluvium. The valley fill is of greatest permeability
3 along and easterly of Pacoima and Tujunga Washes and generally
4 throughout the eastern portion of the valley fill area,
5 except in the vicinity of Glendale where it is of lesser
6 permeability. Ground water occurs mainly within the valley
7 fill, with only negligible amounts occurring in hill and
8 mountain areas. There is no significant ground water movement
9 from the hill and mountain formations into the valley fill.
10 Available geologic data do not indicate that there are any
11 sources of native ground water other than those derived from
12 precipitation. Ground water movement in the valley fill
13 generally follows the surface topography and drainage except
14 where geologic or man-made impediments occur or where the
15 natural flow has been modified by extensive pumping.

16 4.2.3 Separate Ground Water Basins. The physical and
17 geologic characteristics of each of the ground water basins,
18 Eagle Rock, Sylmar, Verdugo and San Fernando, cause impedi-
19 ments to inter-basin ground water flow whereby there is
20 created separate underground reservoirs. Each of said basins
21 contains a common source of water supply to parties extracting
22 ground water from each of said basins. The amount of under-
23 flow from Sylmar Basin, Verdugo Basin and Eagle Rock Basin to
24 San Fernando Basin is relatively small, and on the average has
25 been approximately 540 acre feet per year from the Sylmar
26 Basin; 80 acre feet per year from Verdugo Basin; and 50 acre
27 feet per year from Eagle Rock Basin. Each has physiographic,
28 geologic and hydrologic differences, one from the other, and

1 each meets the hydrologic definition of "basin." The ex-
2 tractions of water in the respective basins affect the other
3 water users within that basin but do not significantly or
4 materially affect the ground water levels in any of the other
5 basins. The underground reservoirs of Eagle Rock, Verdugo and
6 Sylmar Basins are independent of one another and of the San
7 Fernando Basin.

8 4.2.4 Safe Yield and Native Safe Yield. The safe yield
9 and native safe yield, stated in acre feet, of the three
10 largest basins for the year 1964-65 was as follows:

<u>Basin</u>	<u>Safe Yield</u>	<u>Native Safe Yield</u>
San Fernando	90,680	43,660
Sylmar	6,210	3,850
Verdugo	7,150	3,590

15 The safe yield of Eagle Rock Basin is derived from imported
16 water delivered by Los Angeles. There is no measurable
17 native safe yield.

18 4.2.5 Separate Basins -- Separate Rights. The rights
19 of the parties to extract ground water within ULARA are
20 separate and distinct as within each of the several ground
21 water basins within said watershed.

22 4.2.6 Hydrologic Condition of Basins. The several
23 basins within ULARA are in varying hydrologic conditions,
24 which result in different legal consequences.

25 4.2.6.1 San Fernando Basin. The first full year
26 of overdraft in San Fernando Basin was 1954-55. It
27 remained in overdraft continuously until 1962, when an
28 injunction herein became effective. Thereafter, the

1 basin was placed on safe yield operation. There is no
2 surplus ground water available for appropriation or
3 overlying use from San Fernando Basin.

4 4.2.6.2 Sylmar Basin. Sylmar Basin is not in
5 overdraft. There remains safe yield over and above the
6 present reasonable beneficial overlying uses, from which
7 safe yield the appropriative rights of Los Angeles and
8 San Fernando may be and have been exercised.

9 4.2.6.3 Verdugo Basin. Verdugo Basin was in
10 overdraft for more than five consecutive years prior to
11 1968. Said basin is not currently in overdraft, due to
12 decreased extractions by Glendale and Crescenta Valley on
13 account of poor water quality. However, the combined
14 appropriative and prescriptive rights of Glendale
15 Crescenta Valley are equivalent to the safe yield of the
16 Basin. No private overlying or appropriative rights
17 exist in Verdugo Basin.

18 4.2.6.4 Eagle Rock Basin. The only measurable
19 water supply to Eagle Rock Basin is import return water
20 by reason of importations by Los Angeles. Extractions by
21 Foremost and Deep Rock under the prior stipulated
22 judgments have utilized the safe yield of Eagle Rock
23 Basin, and have maintained hydrologic equilibrium
24 therein.

25 5. DECLARATION OF RIGHTS

26 5.1 Right to Native Waters.

27 5.1.1 Los Angeles River and San Fernando Basin.

1 5.1.1.1 Los Angeles' Pueblo Right. Los Angeles,
2 as the successor to all rights, claims and powers of the
3 Spanish Pueblo de Los Angeles in regard to water rights,
4 is the owner of a prior and paramount pueblo right to the
5 surface waters of the Los Angeles River and the native
6 ground waters of San Fernando Basin to meet its reasonable
7 beneficial needs and for its inhabitants.

8 5.1.1.2 Extent of Pueblo Right. Pursuant to said
9 pueblo right, Los Angeles is entitled to satisfy its
10 needs and those of its inhabitants within its boundaries
11 as from time to time modified. Water which is in fact
12 used for pueblo right purposes is and shall be deemed
13 needed for such purposes.

14 5.1.1.3 Pueblo Right -- Nature and Priority of
15 Exercise. The pueblo right of Los Angeles is a prior and
16 paramount right to all of the surface waters of the Los
17 Angeles River, and native ground water in San Fernando
18 Basin, to the extent of the reasonable needs and uses of
19 Los Angeles and its inhabitants throughout the corporate
20 area of Los Angeles, as its boundaries may exist from
21 time to time. To the extent that the Basin contains
22 native waters and imported waters, it is presumed that
23 the first water extracted by Los Angeles in any water
24 year is pursuant to its pueblo right, up to the amount
25 of the native safe yield. The next extractions by Los
26 Angeles in any year are deemed to be from import return
27 water, followed by stored water, to the full extent of
28 Los Angeles' right to such import return water and stored

1 water. In the event of need to meet water requirements
2 of its inhabitants, Los Angeles has the additional right,
3 pursuant to its pueblo right, withdraw temporarily from
4 storage Underlying Pueblo Waters, subject to an obliga-
5 tion to replace such water as soon as practical.

6 5.1.1.4 Rights of Other Parties. No other party
7 to this action has any right in or to the surface waters
8 of the Los Angeles River or the native safe yield of the
9 San Fernando Basin.

10 5.1.2 Sylmar Basin Rights.

11 5.1.2.1 No Pueblo Rights. The pueblo right of
12 Los Angeles does not extend to or include ground waters
13 in Sylmar Basin.

14 5.1.2.2 Overlying Rights. Defendants Moordigian
15 and Hersch & Plumb own lands overlying Sylmar Basin and
16 have a prior correlative right to extract native waters
17 from said Basin for reasonable beneficial uses on their
18 said overlying lands. Said right is appurtenant to said
19 overlying lands and water extracted pursuant thereto may
20 not be exported from said lands nor can said right be
21 transferred or assigned separate and apart from said
22 overlying lands.

23 5.1.2.3 Appropriative Rights of San Fernando
24 and Los Angeles. San Fernando and Los Angeles own
25 appropriative rights, of equal priority, to extract and
26 put to reasonable beneficial use for the needs of said
27 cities and their inhabitants, native waters of the
28 Sylmar Basin in excess of the exercised reasonable

1 beneficial needs of overlying users. Said appropriative
2 rights are:

3 San Fernando 3,580 acre feet

4 Los Angeles 1,560 acre feet.

5 5.1.2.4 No Prescription. The Sylmar Basin is not
6 presently in a state of overdraft and no rights by
7 prescription exist in said Basin against any overlying
8 or appropriative water user.

9 5.1.2.5 Other Parties. No other party to this
10 action owns or possesses any right to extract native
11 ground waters from the Sylmar Basin.

12 5.1.3 Verdugo Basin Rights.

13 5.1.3.1 No Pueblo Rights. The pueblo right of
14 Los Angeles does not extend to or include ground water
15 in Verdugo Basin.

16 5.1.3.2 Prescriptive Rights of Glendale and
17 Crescenta Valley. Glendale and Crescenta Valley own
18 prescriptive rights as against each other and against
19 all private overlying or appropriative parties in the
20 Verdugo Basin to extract, with equal priority, the
21 following quantities of water from the combined safe
22 yield of native and imported waters in Verdugo Basin:

23 Glendale 3,856 acre feet

24 Crescenta Valley 3,294 acre feet.

25 5.1.3.3 Other Parties. No other party to this
26 action owns or possesses any right to extract native
27 ground waters from the Verdugo Basin.
28 -----

1 5.1.4 Eagle Rock Basin Rights.

2 5.1.4.1 No Pueblo Rights. The pueblo right of
3 Los Angeles does not extend to or include ground water
4 in Eagle Rock Basin.

5 5.1.4.2 No Rights in Native Waters. The Eagle
6 Rock Basin has no significant or measurable native safe
7 yield and no parties have or assert any right or claim
8 to native waters in said Basin.

9 5.2 Rights to Imported Waters.

10 5.2.1 San Fernando Basin Rights.

11 5.2.1.1 Rights to Recapture Import Return Water.
12 Los Angeles, Glendale, Burbank and San Fernando have each
13 caused imported waters to be brought into ULARA and to be
14 delivered to lands overlying the San Fernando Basin, with
15 the result that percolation and return flow of such
16 delivered water has caused imported waters to become a
17 part of the safe yield of San Fernando Basin. Each of
18 said parties has a right to extract from San Fernando
19 Basin that portion of the safe yield of the Basin attri-
20 butable to such import return waters.

21 5.2.1.2 Rights to Store and Recapture Stored
22 Water. Los Angeles has heretofore spread imported water
23 directly in San Fernando Basin. Los Angeles, Glendale,
24 Burbank and San Fernando each have rights to store water
25 in San Fernando Basin by direct spreading or in lieu
26 practices. To the extent of any future spreading or in
27 lieu storage of import water or reclaimed water by Los
28 Angeles, Glendale, Burbank or San Fernando, the party

1 causing said water to be so stored shall have a right to
2 extract an equivalent amount of ground water from San
3 Fernando Basin. The right to extract waters attributable
4 to such storage practices is an undivided right to a
5 quantity of water in San Fernando Basin equal to the
6 amount of such Stored Water to the credit of any party,
7 as reflected in Watermaster records.

8 5.2.1.3 Calculation of Import Return Water and
9 Stored Water Credits. The extraction rights of Los
10 Angeles, Glendale, Burbank and San Fernando in San
11 Fernando Basin in any year, insofar as such rights are
12 based upon import return water, shall only extend to the
13 amount of any accumulated import return water credit of
14 such party by reason of imported water delivered after
15 September 30, 1977. The annual credit for such import
16 return water shall be calculated by Watermaster based
17 upon the amount of delivered water during the preceding
18 water year, as follows:

19	Los Angeles:	20.8% of all delivered water (including reclaimed water) to valley fill lands of San Fernando Basin.
20	San Fernando:	26.3% of all imported and reclaimed water delivered to valley-fill lands of San Fernando Basin.
21	Burbank:	20.0% of all delivered water (including reclaimed water) to San Fernando Basin and its tributary hill and mountain areas.

27 - - - - -
28 - - - - -

1 Glendale:

2 20.0% of all delivered water
3 (including reclaimed water) to
4 San Fernando Basin and its
5 tributary hill and mountain
areas (i.e., total delivered
water, [including reclaimed
water], less 105% of total
sales by Glendale in Verdugo
Basin and its tributary hills).

6 In calculating Stored Water credit, by reason of direct
7 spreading of imported or reclaimed water, Watermaster
8 shall assume that 100% of such spread water reached the
9 ground water in the year spread.

10 5.2.1.4 Cummulative Import Return Water Credits.

11 Any import return water which is not extracted in a given
12 water year shall be carried over, separately accounted
13 for, and maintained as a cummulative credit for purposes
14 of future extractions.

15 5.2.1.5 Overextractions. In addition to extrac-
16 tions of stored water, Glendale, Burbank or San Fernando
17 may, in any water year, extract from San Fernando Basin
18 an amount not exceeding 10% of such party's last annual
19 credit for import return water, subject, however, to an
20 obligation to replace such overextraction by reduced
21 extractions during the next succeeding water year. Any
22 such overextraction which is not so replaced shall con-
23 stitute physical solution water, which shall be deemed
24 to have been extracted in said subsequent water year.

25 5.2.1.6 Private Defendant. No private defendant
26 is entitled to extract water from the San Fernando Basin
27 on account of the importation of water thereto by over-
28 lying public entities.

1 5.2.2 Sylmar Basin Rights.

2 5.2.2.1 Rights to Recapture Import Return Waters.

3 Los Angeles and San Fernando have caused imported waters
4 to be brought into ULARA and delivered to lands overlying
5 the Sylmar Basin with the result that percolation and re-
6 turn flow of such delivered water has caused imported
7 waters to become a part of the safe yield of Sylmar Basin.
8 Los Angeles and San Fernando are entitled to recover from
9 Sylmar Basin such imported return waters. In calculating
10 the annual entitlement to recapture such import return
11 water, Los Angeles and San Fernando shall be entitled to
12 35.7% of the preceding water year's imported water de-
13 livered by such party to lands overlying Sylmar Basin.
14 Thus, by way of example, in 1976-77, Los Angeles was
15 entitled to extract 2370 acre feet of ground water from
16 Sylmar Basin, based on delivery to lands overlying said
17 Basin of 6640 acre feet during 1975-76. The quantity of
18 San Fernando's imported water to, and the return flow
19 therefrom, in the Sylmar Basin in the past has been of
20 such minimal quantities that it has not been calculated.

21 5.2.2.2 Rights to Store and Recapture Stored
22 Water. Los Angeles and San Fernando each have the right
23 to store water in Sylmar Basin equivalent to their rights
24 in San Fernando Basin under paragraph 5.2.1.2 hereof.

25 5.2.2.3 Carry Over. Said right to recapture
26 stored water, import return water and other safe yield
27 waters to which a party is entitled, if not exercised in
28 a given year, can be carried over for not to exceed five

1 years, if the underflow through Sylmar Notch does not
2 exceed 400 acre feet per year.

3 5.2.2.4 Private Defendants. No private defendant
4 is entitled to extract water from within the Sylmar Basin
5 on account of the importation of water thereto by over-
6 lying public entities.

7 5.2.3 Verdugo Basin Rights.

8 5.2.3.1 Glendale and Crescenta Valley. Glendale
9 and Crescenta Valley own appropriative and prescriptive
10 rights in and to the total safe yield of Verdugo Basin,
11 without regard as to the portions thereof derived from
12 native water and from delivered imported waters, notwithstanding
13 that both of said parties have caused waters to
14 be imported and delivered on lands overlying Verdugo
15 Basin. Said aggregate rights are as declared in Paragraph
16 5.1.3.2 of these Conclusions.

17 5.2.3.2 Los Angeles. Los Angeles may have a
18 right to recapture its import return waters by reason of
19 delivered import water in the Basin, based upon imports
20 during and after water year 1977-78, upon application to
21 Watermaster not later than the year following such import
22 and on subsequent order after hearing by the Court.

23 5.2.3.3 Private Defendants. No private defendant,
24 as such, is entitled to extract water from within the
25 Verdugo Basin on account of the importation of water
26 thereto by overlying public entities.

27 5.2.4 Eagle Rock Basin Rights.

28 5.2.4.1 Los Angeles. Los Angeles has caused

1 imported water to be delivered for use on lands overlying
2 Eagle Rock Basin and return flow from said delivered
3 imported water constitutes the entire safe yield of Eagle
4 Rock Basin. Los Angeles has the right to extract or
5 cause to be extracted the entire safe yield of Eagle Rock
6 Basin.

7 5.2.4.2 Private Defendants. No private defend-
8 ants have a right to extract water from within Eagle Rock
9 Basin, except pursuant to the physical solution herein.

10 6. INJUNCTIONS

11 Each of the parties named or referred to in this Part 6, its
12 officers, agents, employees and officials is, and they are, hereby
13 ENJOINED and RESTRAINED from doing or causing to be done any of the
14 acts herein specified:

15 6.1 Each and Every Defendant -- from diverting the surface
16 waters of the Los Angeles River or extracting the native waters of
17 SAN FERNANDO BASIN, or in any manner interfering with the prior and
18 paramount pueblo right of Los Angeles in and to such waters,
19 except pursuant to the physical solution herein decreed.

20 6.2 Each and Every Private Defendant -- from extracting
21 ground water from the SAN FERNANDO, VERDUGO, or EAGLE ROCK BASINS,
22 except pursuant to physical solution provisions hereof.

23 6.3 Defaulting and Disclaiming Parties (listed in Attachments
24 "C" and "D") -- from diverting or extracting water within ULARA,
25 except pursuant to the physical solution herein decreed.

26 6.4 Glendale -- from extracting ground water from SAN
27 FERNANDO BASIN in any water year in quantities exceeding its

1 import return water credit and any stored water credit, except
2 pursuant to the physical solution; and from extracting water from
3 VERDUGO BASIN in excess of its appropriative and prescriptive right
4 declared herein.

5 6.5 Burbank -- from extracting ground water from SAN FERNANDO
6 BASIN in any water year in quantities exceeding its import return
7 water credit and any stored water credit, except pursuant to the
8 physical solution decreed herein.

9 6.6 San Fernando -- from extracting ground water from SAN
10 FERNANDO BASIN in any water year in quantities exceeding its
11 import return water credit and any stored water credit, except
12 pursuant to the physical solution herein decreed.

13 6.7 Crescenta Valley -- from extracting ground water from
14 VERDUGO BASIN in any year in excess of its appropriative and
15 prescriptive right declared herein.

16 6.8 Los Angeles -- from extracting ground water from SAN
17 FERNANDO BASIN in any year in excess of the native safe yield,
18 plus any import return water credit and stored water credit of said
19 city; provided, that where the needs of Los Angeles require the
20 extraction of Underlying Pueblo Waters, Los Angeles may extract
21 such water subject to an obligation to replace such excess as soon
22 as practical; and from extracting ground water from VERDUGO BASIN
23 in excess of any credit for import return water which Los Angeles
24 may acquire by reason of delivery of imported water for use over-
25 lying said basin, as hereinafter confirmed on application to
26 Watermaster and by subsequent order of the Court.

27 6.9 Non-consumptive and Minimal Consumptive Use Parties.

28 The parties listed in Attachment "F" are enjoined from extracting

1 water from San Fernando Basin, except in accordance with practices
2 specified in Attachment "F", or pursuant to the physical solution herein decreed.

3

4 7. CONTINUING JURISDICTION

5 7.1 Jurisdiction Reserved. Full jurisdiction, power and
6 authority are retained by and reserved to the Court for purposes of
7 enabling the Court upon application of any party or of the Water-
8 master by motion and upon at least 30 days' notice thereof, and
9 after hearing thereon, to make such further or supplemental orders
10 or directions as may be necessary or appropriate, for interpreta-
11 tion, enforcement or carrying out of this Judgment, and to modify,
12 amend or amplify any of the provisions of this Judgment or to add
13 to the provisions thereof consistent with the rights herein decreed;
14 provided, however, that no such modification, amendment or ampli-
15 fication shall result in a change in the provisions of Section
16 5.2.1.3 or 9.2.1 hereof.

17

18 8. WATERMASTER

19 8.1 Designation and Appointment.

20 8.1.1 Watermaster Qualification and Appointment. A
21 qualified hydrologist, acceptable to all active public agency
22 parties hereto, will be appointed by subsequent order of the
23 Court to assist the Court in its administration and enforce-
24 ment of the provisions of this Judgment and any subsequent
25 orders of the Court entered pursuant to the Court's continuing
26 jurisdiction. Such Watermaster shall serve at the pleasure of
27 the Court, but may be removed or replaced on motion of any
28 party after hearing and showing of good cause.

1 8.2 Powers and Duties.

2 8.2.1 Scope. Subject to the continuing supervision and
3 control of the Court, Watermaster shall exercise the express
4 powers, and shall perform the duties, as provided in this
5 Judgment or hereafter ordered or authorized by the Court in
6 the exercise of the Court's continuing jurisdiction.

7 8.2.2 Requirement for Reports, Information and Records.
8 Watermaster may require any party to furnish such reports,
9 information and records as may be reasonably necessary to
10 determine compliance or lack of compliance by any party with
11 the provisions of this Judgment.

12 8.2.3 Requirement of Measuring Devices. Watermaster
13 shall require all parties owning or operating any facilities
14 for extraction of ground water from ULARA to install and
15 maintain at all times in good working order, at such party's
16 own expense, appropriate meters or other measuring devices
17 satisfactory to the Watermaster.

18 8.2.4 Inspection by Watermaster. Watermaster shall make
19 inspections of (a) ground water extraction facilities and
20 measuring devices of any party, and (b) water use practices by
21 any party under physical solution conditions, at such times
22 and as often as may be reasonable under the circumstances to
23 verify reported data and practices of such party. Watermaster
24 shall also identify and report on any new or proposed new
25 ground water extractions by any party or non-party.

26 8.2.5 Policies and Procedures. Watermaster shall, with
27 the advice and consent of the Administrative Committee, adopt
28 and amend from time to time Policies and Procedures as may be

1 reasonably necessary to guide Watermaster in performance of
2 its duties, powers and responsibilities under the provisions
3 of this judgment.

4 8.2.6 Data Collection. Watermaster shall collect and
5 verify data relative to conditions of ULARA and its ground
6 water basins from the parties and one or more other govern-
7 mental agencies. Where necessary, and upon approval of the
8 Administrative Committee, Watermaster may develop supplemental
9 data.

10 8.2.7 Cooperation With Other Agencies. Watermaster may
11 act jointly or cooperate with agencies of the United States
12 and the State of California or any political subdivisions,
13 municipalities or districts (including any party) to secure or
14 exchange data to the end that the purpose of this Judgment,
15 including its physical solution, may be fully and economically
16 carried out.

17 8.2.8 Accounting for Non-consumptive Use. Watermaster
18 shall calculate and report annually the non-consumptive and
19 consumptive uses of extracted ground water by each party
20 listed in Attachment "F."

21 8.2.9 Accounting for Accumulated Import Return Water
22 and Stored Water. Watermaster shall record and verify addi-
23 tions, extractions and losses and maintain an annual and
24 cummulative account of all (a) stored water and (b) import
25 return water in San Fernando Basin. Calculation of losses
26 attributable to Stored Water shall be approved by the Adminis-
27 trative Committee or by subsequent order of the Court. For
28 purposes of such accounting, extractions in any water year by

1 Glendale, Burbank or San Fernando shall be assumed to be first
2 from accumulated import return water, second from stored
3 water, and finally pursuant to physical solution; provided,
4 that any such city may, by written notice of intent to Water-
5 master, alter said priority of extractions as between import
6 return water and stored water.

7 8.2.10 Recalculation of Safe Yield. Upon request of the
8 Administrative Committee, or on motion of any party and sub-
9 sequent Court order, Watermaster shall recalculate safe yield
10 of any basin within ULARA. If there has been a material long-
11 term change in storage over a base period (excluding any
12 effects of stored water) in San Fernando Basin the safe yield
13 shall be adjusted by making a corresponding change in native
14 safe yield of the Basin.

15 8.2.11 Watermaster Report. Watermaster shall prepare
16 annually and (after review and approval by Administrative
17 Committee) cause to be served on all active parties, on or
18 before May 1, a report of hydrologic conditions and Water-
19 master activities within ULARA during the preceding water
20 year. Watermaster's annual report shall contain such infor-
21 mation as may be requested by the Administrative Committee,
22 required by Watermaster Policies and Procedures or specified
23 by subsequent order of this Court.

24 8.2.12 Active Party List. Watermaster shall maintain at
25 all times a current list of active parties and their addresses.

26 8.3 Administrative Committee.

27 8.3.1 Committee to be Formed. An Administrative Commit-
28 tee shall be formed to advise with, request or consent to, and

1 review actions of Watermaster. Said Administrative Committee
2 shall be composed of one representative of each party having
3 a right to extract ground water from ULARA, apart from the
4 physical solution. Any such party not desiring to participate
5 in such committee shall so advise Watermaster in writing.

6 8.3.2 Organization and Voting. The Administrative
7 Committee shall organize and adopt appropriate rules and
8 regulations to be included in Watermaster Policies and Pro-
9 cedures. Action of the Administrative Committee shall be by
10 unanimous vote of its members, or of the members affected in
11 the case of an action which affects one or more basins but
12 less than all of ULARA. In the event of inability of the
13 Committee to reach a unanimous position, the matter may, at
14 the request of Watermaster or any party, be referred to the
15 Court for resolution by subsequent order after notice and
16 hearing.

17 8.3.3 Function and Powers. The Administrative Committee
18 shall be consulted by Watermaster and shall request or approve
19 all discretionary Watermaster determinations. In the event of
20 disagreement between Watermaster and the Administrative
21 Committee, the matter shall be submitted to the Court for
22 review and resolution.

23 8.4 Watermaster Budget and Assessments.

24 8.4.1 Watermaster's Proposed Budget. Watermaster
25 shall, on or before May 1, prepare and submit to the Adminin-
26 istrative Committee a budget for the ensuing water year.
27 The budget shall be determined for each basin separately and
28 allocated between the separate ground water basins. The

1 total for each basin shall be allocated between the public
2 agencies in proportion to their use of ground water from such
3 basin during the preceding water year.

4 8.4.2 Objections and Review. Any party who objects to
5 the proposed budget, or to such party's allocable share there-
6 of, may apply to the Court within thirty (30) days of receipt
7 of the proposed budget from Watermaster for review and modifi-
8 cation. Any such objection shall be duly noticed to all in-
9 terested parties and heard within thirty (30) days of notice.

10 8.4.3 Notice of Assessment. After thirty (30) days from
11 delivery of Watermaster's proposed budget, or after the order
12 of Court settling any objections thereto, Watermaster shall
13 serve notice on all parties to be assessed of the amount of
14 assessment and the required payment schedule.

15 8.4.4 Payment. All assessments for Watermaster expenses
16 shall be payable on the dates designated in the notice of
17 assessment.

18 8.5 Review of Watermaster Activities.

19 8.5.1 Review Procedures. All actions of Watermaster
20 (other than budget and assessment matters, which are provided
21 for in Paragraph 8.4.2) shall be subject to review by the
22 Court on its own motion or on motion by any party, as follows:

23 8.5.1.1 Noticed Motion. Any party may, by a
24 regularly noticed motion, apply to the Court for review
25 of any Watermaster's action. Notice of such motion shall
26 be served personally or mailed to Watermaster and to all
27 active parties.

28 8.5.1.2 De Novo Nature of Proceedings. Upon the

filings of any such motion, the Court shall require the moving party to notify the active parties of a date for taking evidence and argument, and on the date so designated shall review de novo the question at issue. Watermaster's findings or decision, if any, may be received in evidence at said hearing, but shall not constitute presumptive or prima facie proof of any fact in issue.

8.5.1.3 Decision. The decision of the Court in such proceeding shall be an appealable supplemental order in this case. When the same is final, it shall be binding upon the Watermaster and all parties.

9. PHYSICAL SOLUTION

9.1 Circumstances Indicating Need for Physical Solution.

15 During the period between 1913 and 1955, when there existed tempor-
16 ary surplus waters in the San Fernando Basin, overlying cities and
17 private overlying landowners undertook to install and operate water
18 extraction, storage and transmission facilities to utilize such
19 temporary surplus waters. If the injunction against interference
20 with the prior and paramount rights of Los Angeles to the waters of
21 the San Fernando and Eagle Rock Basins were strictly enforced, the
22 value and utility of those water systems and facilities would be
23 lost or impaired. It is appropriate to allow continued limited
24 extraction from the San Fernando and Eagle Rock Basins by parties
25 other than Los Angeles, subject to assurance that Los Angeles will
26 be compensated for any cost, expense or loss incurred as a result
27 thereof.

26 9.2 Prior Stipulated Judgments. Several defendants

1 heretofore entered into separate stipulated judgments herein,
2 during the period June, 1958 to November, 1965, each of which
3 judgments was subject to the Court's continuing jurisdiction.
4 Without modification of the substantive terms of said prior judg-
5 ments, the same are categorized and merged into this judgment and
6 superseded hereby in the exercise of the Court's continuing juris-
7 diction, as follows:

9.2.1 Eagle Rock Basin Parties. Stipulating defendants Foremost and Deep Rock have extracted water from Eagle Rock Basin, whose entire safe yield consist of import return waters of Los Angeles. Said parties may continue to extract water from Eagle Rock Basin to supply their bottled drinking water requirements upon filing all required reports on said extraction with Watermaster and Los Angeles and paying Los Angeles annually an amount equal to \$21.78 per acre foot for the first 200 acre feet, and \$39.20 per acre foot for any additional water extracted in any water year.

9.2.2 Non-consumptive or Minimal-consumptive Operations.
Certain stipulating defendants extract water from San Fernando Basin for uses which are either non-consumptive or have a minimal consumptive impact. Each of said defendants who have a minimal consumptive impact has a connection to the City of Los Angeles water system and purchases annually an amount of water at least equivalent to the consumptive loss of extracted ground water. Said defendants are:

Non-Consumptive

Walt Disney Productions

Sears, Roebuck & Co.

1 Minimal-Consumptive

2 Conrock Co., for itself and as successor to California
3 Materials Co.; Constance Ray White and Lee L. White;
4 Mary L. Akmadzich and Peter J. Akmadzich
5 Livingston Rock & Gravel, for itself and as successor
6 to Los Angeles Land & Water Co.

7 The nature of each said defendant's water use practices is
8 described in Attachment "F". Subject to required reports to
9 and inspections by Watermaster, each said defendant may
10 continue extractions for said purposes so long as in any year
11 such party continues such non-consumptive or minimal-
12 consumptive use practices.

13 9.2.3 Abandoned Operations. The following stipulating
14 defendants have ceased extracting water from San Fernando
15 Basin and no further need exists for physical solution in
16 their behalf:

17 Knickerbocker Plastic Company, Inc.

18 Carnation Company

19 Hidden Hills Mutual Water Company

20 Southern Pacific Railroad Co.

21 Pacific Fruit Express Co.

22 9.3 Private Defendants. There are private defendants who in-
23 stalled during the years of temporary surplus relatively substantial
24 facilities to extract and utilize ground waters of San Fernando
25 Basin. Said defendants may continue their extractions for consump-
26 tive use up to the indicated annual quantities upon payment of com-
27 pensation to the appropriate city wherein their use of water is
28 principally located, on the basis of the following physical solution:

9.3.1 Private Defendants and Appropriate Cities. Said private defendants and the cities to which their said extractions shall be charged and to which physical solution payment shall be made are:

		<u>Annual Quantities</u> (acre feet)
Los Angeles	- Toluca Lake	100
	Sportsman's Lodge	25
	Van de Kamp	120
Glendale	- Forest Lawn	400
	Southern Service Co.	75
Burbank	- Valhalla	300
	Lockheed	25

Provided that said private defendants shall not develop, install or operate new wells or other facilities which will increase existing extraction capacities.

9.3.2 Reports and Accounting. All extractions pursuant to this physical solution shall be subject to such reasonable reports and inspections as may be required by Watermaster.

9.3.3 Payment. Water extracted pursuant hereto shall be compensated for by annual payment to Los Angeles, and as agreed upon pursuant to paragraph 9.3.3.2 to Glendale and Burbank, thirty days from day of notice by Watermaster, on the following basis:

9.3.3.1 Los Angeles. An amount equal to what such party would have paid had water been delivered from the distribution system of Los Angeles, less the average energy cost of extraction of ground water by Los Angeles from San Fernando.

9.3.3.2 Glendale or Burbank. An amount equal to

1 the sum of the amount payable to Los Angeles under para-
2 graph 9.4 hereof and any additional charges or conditions
3 agreed upon by either such city and any private defendant.

4 9.4 Glendale and Burbank. Glendale and Burbank have each
5 installed, during said years of temporary surplus, substantial
6 facilities to extract and utilize waters of the San Fernando Basin.
7 In addition to the use of such facilities to recover import return
8 water, the distribution facilities of such cities can be most
9 efficiently utilized by relying upon the San Fernando Basin for
10 peaking supplies in order to reduce the need for extensive new
11 surface storage. Glendale and Burbank may extract annual quanti-
12 ties of ground water from the San Fernando Basin, in addition to
13 their rights to import return water or stored water, as heretofore
14 declared, in quantities up to:

15 Glendale 5,500 acre feet
16 Burbank 4,200 acre feet;

17 provided, that said cities shall compensate Los Angeles annually
18 for any such excess extractions over and above their declared
19 rights at a rate per acre foot equal to the average MWD price for
20 municipal and industrial water delivered to Los Angeles during the
21 fiscal year, less the average energy cost of extraction of ground
22 water by Los Angeles from San Fernando Basin during the preceding
23 fiscal year. Provided, further, that ground water extracted by
24 Forest Lawn and Southern Service Co. shall be included in the
25 amount taken by Glendale, and the amount extracted by Valhalla and
26 Lockheed shall be included in the amount taken by Burbank. All
27 water taken by Glendale or Burbank pursuant hereto shall be charged
28 against Los Angeles' rights in the year of such extractions.

1 In the event of emergency, and upon stipulation or motion
2 and subsequent order of the Court, said quantities may be enlarged
3 in any year.

4 9.5 San Fernando. San Fernando delivers imported water on
5 lands overlying the San Fernando Basin, by reason of which said
6 city has a right to recover import return water. San Fernando does
7 not have water extraction facilities in the San Fernando Basin, nor
8 would it be economically or hydrologically useful for such facil-
9 ities to be installed. Both San Fernando and Los Angeles have
10 decreed appropriative rights and extraction facilities in the
11 Sylmar Basin. San Fernando may extract ground water from the
12 Sylmar Basin in a quantity sufficient to utilize its San Fernando
13 Basin import return water credit, and Los Angeles shall reduce its
14 Sylmar Basin extractions by an equivalent amount and receive an
15 offsetting entitlement for additional San Fernando Basin extractions.

16 9.6 Effective Date. This physical solution shall be effec-
17 tive on October 1, 1978, based upon extractions during water year
18 1978-79.

19

20 10. MISCELLANEOUS PROVISIONS

21 10.1 Designation of Address for Notice and Service. Each
22 party shall designate the name and address to be used for purposes
23 of all subsequent notices and service herein by a separate design-
24 nation to be filed with Watermaster within thirty (30) days after
25 Notice of Entry of Judgment has been served. Said designation may
26 be changed from time to time by filing a written notice of such
27 change with the Watermaster. Any party desiring to be relieved
28 of receiving notices of Watermaster activity may file a waiver of

1 notice on a form to be provided by Watermaster. Thereafter such
2 party shall be removed from the Active Party list. For purposes of
3 service on any party or active party by the Watermaster, by any
4 other party, or by the Court, of any item required to be served
5 upon or delivered to such party or active party under or pursuant
6 to the Judgment, such service shall be made personally or by de-
7 posit in the United States mail, first class, postage prepaid,
8 addressed to the designee and at the address in the latest desig-
9 nation filed by such party or active party.

10.2 Notice of Change in Hydrologic Condition -- Sylmar Basin.

11 If Sylmar Basin shall hereafter be in a condition of overdraft due
12 to increased or concurrent appropriations by Los Angeles and San
13 Fernando, Watermaster shall so notify the Court and parties concern-
14 ed, and notice of such overdraft and the adverse effect thereof on
15 private overlying rights shall be given by said cities as prescribed
16 by subsequent order of the Court, after notice and hearing.

¹⁷ 10.3 Judgment_Binding on Successors. This Judgment and all

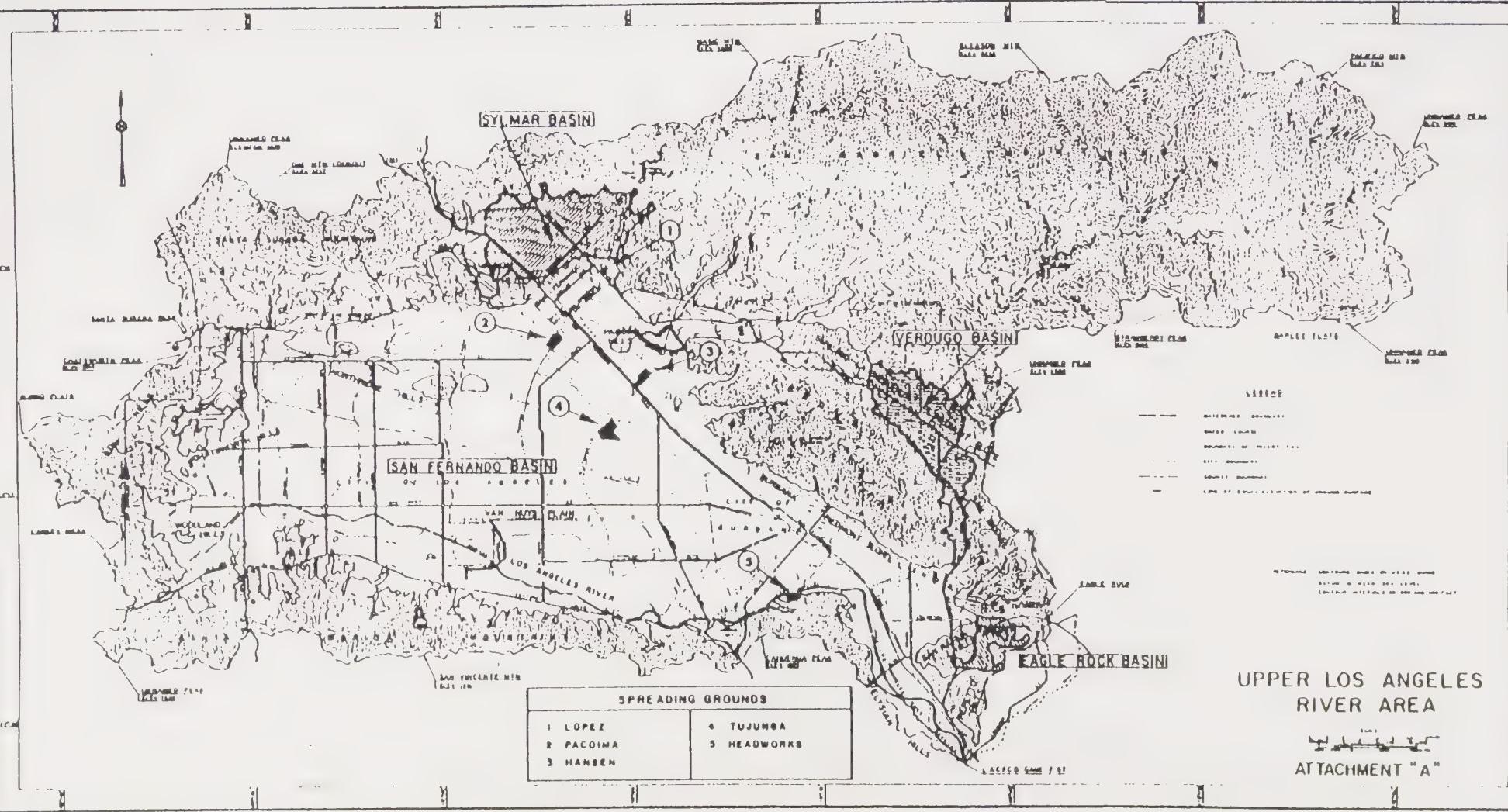
provisions thereof are applicable to and binding upon not only the parties to this action, but also upon their respective heirs, executors, administrators, successors, assigns, lessees and licensees and upon the agents, employees and attorneys in fact of all such persons.

23 : 10.4 Costs. Ordinary court costs shall be borne by each
24 party, and reference costs shall be borne as heretofore allocated
25 and paid.

26 DATED: July 26, 1979.

~~Judge of the Superior Court~~

۶۹



ATTACHMENT "B"
LIST OF DISMISSED PARTIES

Adams, Catherine
Adair, Leo W.
Anderson, Jesse E.
Anderson, Elizabeth A.
Anderson, Leland H.
Anderson, Bessie E.
Bank of America, N.T. & S.A.,
(Trustee)
Becker, Barbara
Beatrice Foods Company
Becker, Bert
Bishop, Elfreda M.
Bishop, William E.
Block, Leonard W.
Block, Margery J.
Burbank C. U. School District
Busk, Rodney E.
California, State of
California Trust Company,
(Trustee)
California Trust Company,
Trustec for First National
Bank of Glendale
Citizens N.T.S. Bank of L.A.,
Trustee of M. M. Crenshaw
Citizens National Trust &
Savings Bank of Los Angeles
Citizens National Trust &
Savings Bank of Los Angeles,
Trustee, Deed of Trust 3724
Color Corporation of America
Corporation of America
Corporation of America, Trustee
for Bank of America 32
Doe Corporation, 10-50
Doe 18-500
Duckworth, John W., (Estate of)
Equitable Life Assurance
Society of the United States
Fidelity Federal Savings &
Loan Association

Fitz-Patrick, Ada H.
Fitz-Patrick, C. C.
Frank X. Enderle, Inc., Ltd.
George, Florence H.
George, Elton
Ghiglia, Frank P.
Givan, Amelia (Deceased)
Glendale Junior College District
of Los Angeles County
Glendale Unified School District
Glenhaven Memorial Park, Inc.
Griffith, Howard Barton
Handorf, August V., Heirs of
Hanna, George
Hicks, Forrest W., Executor of
Estate of (California Bank)
Houston-Fearless Corp., The
Industrial Fuel Supply Co.
Intervalley Savings & Loan
Association
Julius, Adenia C.
Julius, Louis A.
Kaesemeyer, Edna M.
Karagozian, Charles
Kates, Nathan as Co-Executor,
Estate of Duckworth.
Kelley, June
Kelley, Victor H.
Kiener, Harry, Deceased,
Heirs of
Knupp, Guy, Trustee
Landes, Clara Bartlett
Lentz, Richard
Los Angeles County Flood
Control District
Los Angeles Land and Water
Company
Los Angeles Trust and Savings
Deposit Company (Safe)

Los Angeles Safe Deposit Company, Trustee for Security First National Bank of Los Angeles

Los Angeles Trust and Safe Deposit Company, Trustee for H. Kiefer

Lytle, Lydia L.

Massachusetts Mutual Life Insurance Company

Mahannah, E. E.

Mahannah, Hazel E.

M.C.A., Inc.

Mangan, Blanche M.

Mangan, Nicholas

McDougal, Murray

McDougal, Marian Y.

Mellenthin, Helen Louise

Mellenthin, William

Metropolitan Life Insurance Company

Morgan, Kenneth H.

Morgan, Anne

Mulholland Orchard Company

Mutual Life Insurance Company of New York

Northwestern Mutual Life Insurance Company

Oakmont Club

Oakwood Cemetery Association

Pasadena Savings & Loan Association

Pagliai, Bruno

Pacific Lighting Corporation

Pierce Brothers Mortuary

Premier Laundry Company, Inc.

Pur-o-Spring Water Company

Renfrow, Mary Mildred

Renfrow, Pleasant Thomas

Reinert, H. C.

Reinert, Lauretta

Richardson, Helen I.

Richardson, William L.

Security First National Bank of Los Angeles, Trustee

Security First National Bank of Los Angeles, Trustee for L. Schwaiger, etc.

Smith, T. A.

Smith, Sidney, Estate of, F. Small, Administrator

Southern California Service Corp., Trustee for Verdugo Savings and Loan Association

Sylmar Properties Inc.

Title Insurance and Trust Co., Trustee for Metropolitan Life Insurance Company, I. 1570

Title Insurance and Trust Co., Trustee for Western Mortgage Company

Title Guarantee & Trustee Company, Trustee

Title Insurance & Trust Company, Trustee for C. Fitz-Patrick

Title Insurance & Trust Company, Trustee for Intervally Savings and Loan Association, 1114

Title Insurance & Trust Company, for Fidelity Savings & Loan Association

Title Insurance & Trust Company for Equitable Life Assurance Society, U.S.

Union Bank & Trust Company of Los Angeles Trustee for B. Becker, et al.

Valliant, Gidde C.

Verdugo Savings & Loan Association

Warner Brothers Pictures, Inc.

Warner Ranch Company, Inc.

Walleck, Henry L., as Executor of the Estate of A. Givan

Western Mortgage Company

Wheeland, H. W.

Wilcox, Ray C.

Wise, Constance Julia

Wise, Robert Taylor

Young, Donald M.

Young, Marcia S.

ATTACHMENT "C"
LIST OF DEFAULTED PARTIES

Aetna Life Insurance Company
American Savings & Loan Association
Babikian, Helen
Bank of America, N.T. & S.A., Trustee
Bannan, B. A.
Bannan, Clotilde R.
Berkemeyer, Henry W.
Berkemeyer, Hildur M.
Bell, William M.
Bell, Sallie C.
Borgia, Andrea, Estate of
Borgia, Frances
Brown, Stella M.
Burns, George A.
Burns, Louise J.
California Bank, Trustee re Hollywood State Bank
California Bank, Trustee
Citizens National Bank & Savings Bank of Los Angeles, Trust for W. Stavert
Citizens National Trust & Savings Bank of Los Angeles, Mort. I. 164
Citizens National Trust & Savings Bank of Los Angeles, Trustee
Citizens National Trust & Savings Bank of Los Angeles, Co-Trustee for Estate of A. V. Handorf
Clauzon, Emma S.
Continental Auxillary Company (Doe Corporation 1)
Cowlin, Josephine McC.
Cowlin, Donald G.
Cowlin, Dorothy N.
Corporation of America, Trustee for Bank of America, I. 54
Desco Corp.
Diller, Michael
Erratchuo, Richard
Glendale Towel and Linen Supply Company
Guyer, Irene W.
Herrmann, Emily Louise by Louis T. Herrmann, Successor In Interest
Hicks, Forrest W., Executor of Estate of (California Bank)
Hidden Hills Corporation
Holmgrin, Neva Bartlett
Hope, Lester Townes
Hope, Dolores Defina
Huston Homes (Doe Corporation 8)
Johnson, William Arthur, Sr. (Doe 11)
Johnson, Grace Luvena (Doe 12)
Jessup, Marguerite R., Trustee (for 6)
Jessup, Marguerite Rice
Jessup, Roger
La Maida, James V. (Doe 10)
La Marda, Tony (La Maida)
Lancaster, Paul E.
Lancaster, Willism
Land Title Insurance Company, as Trustee
Land Title Insurance Company
Los Angeles Pet Cemetery
Metropolitan Savings & Loan Association of Los Angeles
Monteria Lake Association

Mosher, Eloise V.
Mosher, W. E.
Murray, Marie
Pacific Lighting and Gas Supply Co.
Plemonns, Florence S.
Plemonns, John R.
Polar Water Company
Pryor, Charles
Rauch, Phil
Roger Jessup Farms
Rushworth, Helen
Rushworth, Lester
Schwaiger, Cecil A.
Schwaiger, Lester R.
Sealand Investment Corporation,
Trustee for Metropolitan Savings & Loan Association
Sealand Investment Corporation
Smith, Florence S. (Plemonns)
Southern Service Company, Ltd.
Stavert, Walter W.
Sun Valley National Bank of Los Angeles
Title Insurance and Trust Co.,
Trustee T. I. Deed of Trust,
I. 31, 32
Title Insurance and Trust Co.,
Trustee for Intervalley Savings & Loan Association
I. 2509
Title Insurance & Trust Co.,
Trustee for Massachusetts Mutual Life Insurance Co.
Title Insurance and Trust Co.
Title Insurance and Trust Co.,
Trustee A.
Title Insurance and Trust Co.,
Trustee for Sun Valley National Bank of Los Angeles

Title Insurance and Trust Co.,
Trustee for J. McC. Cowlin
Title Insurance and Trust Co.,
Trustee for P. E. Lancaster
Title Insurance and Trust Co.,
Trustee T. I., Deed of Trust
I. 829
Title Insurance and Trust Co.,
Trustee for C. R. Bannan,
et al.
Wheeland, Henry R.
Wheeland, Elizabeth A.
Woodward, E. C., Co-Trustee of
the Estate of A. V. Mandorf
Wright, Alice M.
Wright, J. Marion
Wright, Irene Evelyn
Wright, Ralph Carver

ATTACHMENT "D"
DISCLAIMING PARTIES

Andrew Jergens Company, The	Mulholland, Perry
Boyar, Mark	Mulholland, Thomas
Chace, William M. (dba V.P.L.C.)	Mureau, Charles
DeMille, Cecil B., Estate of	Nathan, Julia N., Trustee
Drewry Photocolor Corp.	Oakmont Country Club
Hayes, Hay B. (Hal)	Platt, George E. Company
Houston Color Film Laboratories, Inc.	Richfield Oil Corporation
Krown, Samuel P.	Riverwood Ranch Mutual Water Company
La Canada Irrigation District	Smith, Benjamin B.
Lakeside Golf Club (of Hollywood)	Southern California Edison Company
Lakewood Water & Power Company	Spinks Realty Company
Mack, Lucille	Sportsman's Lodge Banquet Corporation
Mollin Investment Co.	Stetson, G. Henry
Mulholland, P. & R., Trustees for R. Wood	Technicolor Corporation
Mulholland, Rose	Valley Lawn Memorial Park

ATTACHMENT "E"
LIST OF PRIOR STIPULATED JUDGMENTS

<u>PARTY</u>	<u>DATE JUDGMENT FILED</u>
Akmadzich, Mary L.	July 24, 1959
Akmadzich, Peter J.	July 24, 1959
California Materials Company	July 24, 1959
Carnation Company	Nov. 20, 1958
Consolidated Rock Products Co.	July 24, 1959
Hidden Hills Mutual Water Company	March 11, 1965
Knickerbocker Plastic Company, Inc.	Feb. 15, 1960
Livingston Rock & Gravel Co., Inc.	July 24, 1959
Pacific Fruit Express Company	March 11, 1965
Pendleton, Evelyn M., dba Deep Rock Artesian Water Company	Nov. 1, 1965
Sears, Roebuck and Company	June 9, 1958
Southern Pacific Company	March 11, 1965
Sparkletts Drinking Water Corporation	Nov. 1, 1965
Valley Park Corporation	July 24, 1959
Walt Disney Productions	May 15, 1961
White, Constance Ray	Feb. 15, 1960
White, Leo L.	Feb. 15, 1960

1 ATTACHMENT "F"

2 STIPULATED

3 NON-CONSUMPTIVE OR MINIMAL-CONSUMPTIVE USE

4 PRACTICES

5 Non-Consumptive Uses

7 Disney -- extracted ground water is used for air conditioning
8 cooling water in a closed system, which discharges to the
9 channel of the Los Angeles River and is subsequently spread
10 and recharges San Fernando Basin, without measurable diminu-
11 tion or loss.

12 Sears, Lockheed and Carnation -- extracted ground water, or a
13 portion thereof, is used for air conditioning cooling in a
14 closed system, which discharges to San Fernando Basin through
15 an injection well.

16 Toluca Lake -- that portion of extracted ground water which is not
17 consumptively used, by evaporation or otherwise, is circu-
18 lated and passed through the lake to the channel of the Los
19 Angeles River immediately upstream from Los Angeles' spread-
20 ing grounds, where such water is percolated into the ground
21 water of the Basin without measurable diminution or loss.

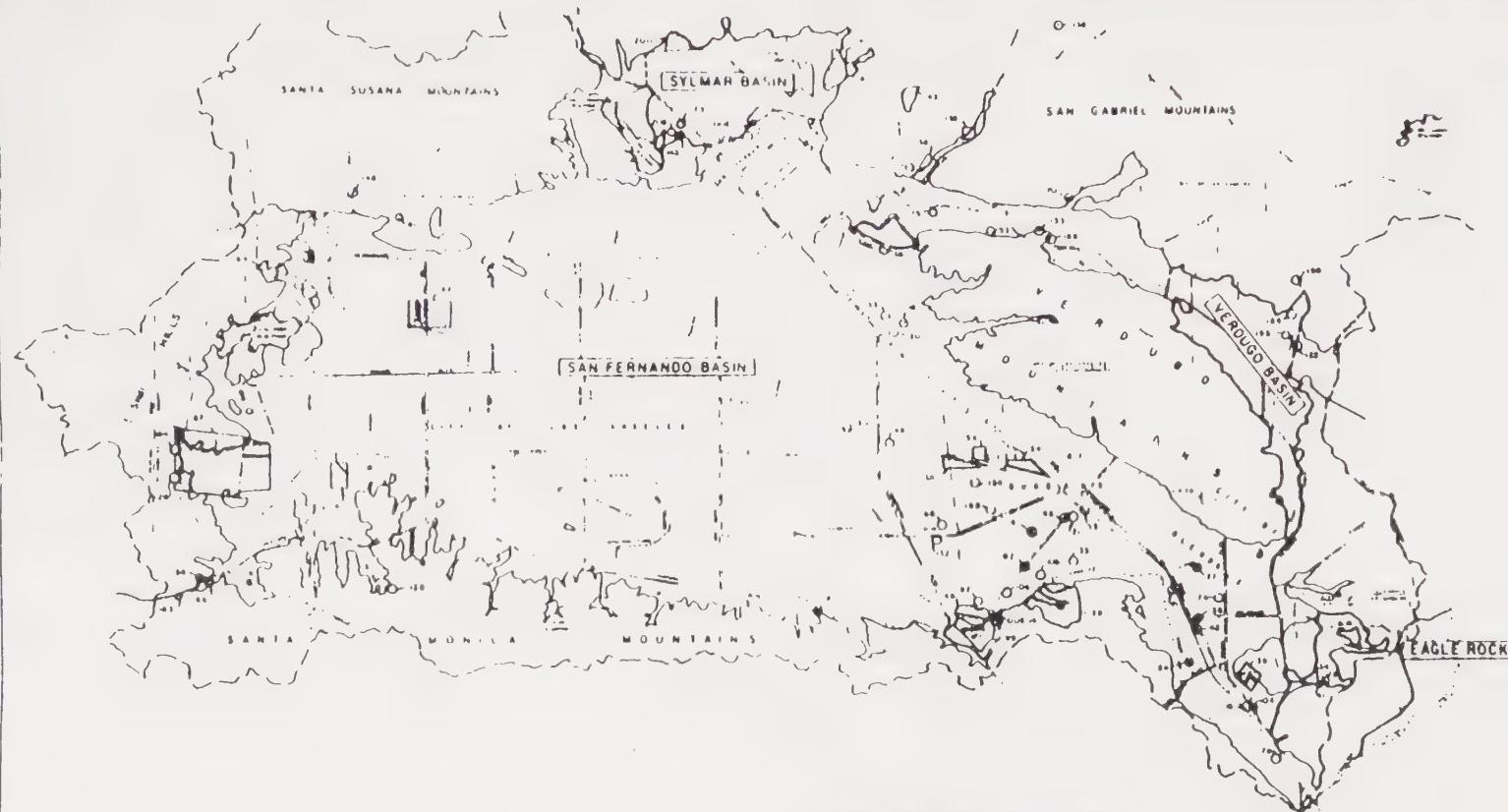
22 Sportsman's Lodge -- that portion of extracted ground water which
23 is not consumptively used, by evaporation or otherwise, is
24 circulated and passed through fish ponds and returned to
25 channels tributary to Los Angeles River upstream from Los
26 Angeles' spreading grounds, where such water is percolated
27 into the ground water of the Basin without measurable loss.

28 - - - - -

1 MINIMAL-CONSUMPTIVE USES

2 Conrock -- extracted ground water is used in rock, sand and
3 & gravel, and ready-mix concrete operations with net
4 Livingston consumptive use of 10%, with the remaining 90%
5 returning to the ground water. Each party purchases
6 surface water from Los Angeles in amounts at least
7 equivalent to such consumptive losses.

8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28



LEGEND
 STATE BOUNDARY
 WATER COURSE
 COUNTY BOUNDARY
 PLACE OF USE AND
 SERVICE AREA
 FOR PRIVATE DEFENDANTS

O-188

PLACE OF USE
 AND SERVICE AREA
 OF PRIVATE DEFENDANTS



ATTACHMENT "G"

DEFENDANT NUMBER AND IDENTIFICATION

4	BURBANK UNIFIED SCHOOL DIST.	48	KOTICKERBOCKER PLASTIC CO., INC.	76	SOUTHERN PACIFIC RAILROAD CO.	127	STELLA H. BROWN	188	FLORENCE B. FLEMING
6	L.A.C.F.C.D.	49	LAKESIDE GOLF CLUB OF HOLLYWOOD	77	SOUTHERN SERVICE CO., LTD.	128	MARY BOYAR	194	LESTER RUSHWORTH
13	THE ANDREW JEROME CO.	53	LIVINGSTON ROCK & GRAVEL CO.	78	SPARKLETT'S DRINKING WATER CORP.	129	GEORGE A. BURNS	195	LESTER R. SCHWAGER
19	BEATRICE PODIS CO.	54	LOCKHEED AIRCRAFT CORP.	79	SPRING REALTY CO.	132	WILLIAM H. CRACE	196	SIDNEY SMITH
20	CALIFORNIA MATERIALS CO.	56	LOS ANGELES PET CEMETERY	80	SPRINTER'S LODGE, INC.	134	EMMA L. CLAUSSON	200	G. ALBERT STATION
21	CANNATION CO.	61	MONTIERA LAKE ASSOC.	82	TACOMACOLOR CORP.	136	CECIL B. DETHMILLE	204	A. H. WARNER
30	CONSOLIDATED ROCK PROD. CO.	62	MULHOLLAND ORCHARD CO.	97	TULARE LAKE PROP. OWNERS ASSOC.	141	HAROLD DUDEWORTH	205	ELIZABETH A. WEEKLAND
34	DEEP ROCK ARTESIAN WATER CO.	64	OAKWOOD CEMETERY ASSOC.	99	UNIVERSAL PICTURES CO.	143	RICHARD BRATCHOU	211	ALICE H. WRIGHT
35	DISCO COOP.	66	PACIFIC LIGHTING & GAS SUPPLY CO.	101	VANNUALA MEMORIAL PARK	146	ROBERT BARTON GRIFFITH	DOB CORP 4	MOLLIE INVESTMENT CORP.
36	DRAKE PHOTOCOLOR CORP.	67	GEORGE E. PLATT CO.	104	VAN DE KERKE DUTCH BAKERS INC.	153	REVA BARTLETT	DOB 1	EDWARD LOUIS KERRIGAN
39	FOREST LAWN CO.	68	POLAR WATER CO.	105	WALT DISNEY PRODUCTIONS	164	E. E. MAHANNAH	DOB 14	LESTER TORNER MORE
41	FRESHWATER WATER CO.	70	RIVERWOOD RANCH MUTUAL WATER CO.	106	WARNER BROS. PICTURES, INC.	168	CELESTE LOUISE MCCABE		
42	GLendale TUNNEL & LINEN SUPPLY CO.	71	ROGER JESSUP FARMS	117	WILLIAM O. BARTHOLOMAEUS	173	KIRAG MOORDIGIAN		
43	GUADALAJARA MEMORIAL PARK, INC.	74	SEARS, ROEBUCK & CO.	120	HENRY W. BERNDTMEYER	181	JOHN E. MULLIN		
46	HOUSTON COLOR FILM LAB., INC.	75	SOUTHERN CAL. EDISON CO.	123	KIRKLAND M. BISHOP	183	CHARLES MURRAY		

APPENDIX D

STIPULATION AND ORDER

SYLMAR BASIN - MARCH 22, 1984

1 IRA REINER, City Attorney
2 EDWARD C. FARRELL, Chief Assistant
3 City Attorney for Water and Power
4 STEPHEN R. POWERS, JR., Senior
5 Assistant City Attorney
6 RALPH GUY WESSON, Assistant City Attorney
7 111 North Hope Street
8 Los Angeles, California 90012
9 (213) 481-6372

ORIGINAL FILED

MAR 22 1984

COUNTY CLERK

Attorneys for Plaintiff

SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

THE CITY OF LOS ANGELES,) No. 650079
vs. Plaintiff,) STIPULATION AND ORDER RE
CITY OF SAN FERNANDO, et al.,) SYLMAR BASIN PURSUANT TO
Defendants.) SECTION 10.2 OF JUDGMENT

The City of Los Angeles by and through Ira Reiner, City Attorney, Edward C. Farrell, Chief Assistant City Attorney for Water and Power, Ralph Guy Wesson, Assistant City Attorney, the City of San Fernando by and through City Attorneys Rutan and Tucker, Robert S. Bower and Arthur G. Kidman, Kisag and Dean Mordigian by Lawrence M. Dougherty, and Meurer Eng., Inc., by Roger or Charles Meurer, stipulate that the Court may enter an order as provided herein with regard to the following facts.

1. The Judgment requires in Section 10.2 that the Watermaster notify the Court and parties in the event the Sylmar Basin becomes overdrafted due to pumping by Los Angeles and San Fernando.

- 1
2. On August 26, 1983, the Watermaster reported to the
3 Court pursuant to Section 10.2 of the Judgment that
4 the Sylmar Basin was in a condition of overdraft
5 (Attachment 1). In response to the Watermaster's
6 letter and a Minute Order of this Court (Attachment
7 2), the Cities of Los Angeles and San Fernando
8 responded by letters to the Court (Attachments 3 &
9 4), agreeing with the Watermaster's report on
10 overdraft.
- 11 3. The Court has determined that pumping from the
12 Sylmar Basin shall be reduced to the safe yield
13 (6210 AF/YR at present) of the basin, effective
14 October 1, 1984.
- 15 4. Sections 5.1.2 and 5.2.2 of the Judgment provide
16 for the rights of the parties. The private parties
17 within the Sylmar Basin, Defendants Kisag
18 Moordigian and Meurer Engr. (successor to Hersch
19 and Plumb), have decreed overlying water rights.
20 However, Mr. Moordigian has not pumped since
21 1956-57 and has disposed of most of the lands
22 originally involved in this proceeding. Meurer
23 Engr. has pumped less than 0.5 AF/YR. since
24 1975-76, but may increase this amount slightly in
25 the future. Even though the combined pumping of
26 these private parties has been less than one
27 acre-foot per year, provision for their rights
28 pursuant to Section 5.1.2.2 of the Judgment is made

in this stipulation. That pumping which occurs pursuant to the overlying rights of the private parties is to be subtracted from the safe yield, with Los Angeles and San Fernando pumping the remainder.

5. Parties, City of Los Angeles and City of San Fernando, agree that pumping within the Sylmar Basin must be brought within the safe yield, determined to be 6,210 AF/YR at present. The Cities of Los Angeles and San Fernando have rights to native waters and import return waters within the Sylmar Basin. Their combined water rights to native and imported waters (Sections 5.1.2.3. and 5.2.2.1 of the Judgment) are nearly equal. Each has pumped approximately one-half of the total safe yield of the said basin for the past 14 years (1968-69 through 1982-83). The City of Los Angeles and the City of San Fernando stipulate herein that the Court may enter an order limiting each City's pumping to the following amounts less-one half of any rights exercised in accordance with paragraph 4 herein:

City of Los Angeles - 3,105 AF/YR.

City of San Fernando - 3,105 AF/YR.

6. Section 10.2 of the Judgment requires that a notice of hearing be set for this matter. However, the parties herein stipulate to waive notice and

1 hearing as to the matter stated herein and to the
2 order of court attached.

- 3 7. At the time of the entry of the Final Judgment
4 (January 26, 1979), the Sylmar Basin was declared
5 not to be in a condition of overdraft (Section
6 4.2.6.2). Thus, the Final Judgment did not provide
7 for safe yield operations of said basin during
8 unusual circumstances, such as dry years or water
9 system problems.

10 The parties recognize the importance of preserving
11 the Sylmar Basin as a water production and
12 groundwater storage resource. Los Angeles and
13 San Fernando seek to permit flexibility in the use
14 of this resource without causing damage to the
15 basin.

16 To provide for water shortages due to unusual
17 circumstances, such as weather conditions or water
18 system operational problems, Los Angeles and
19 San Fernando shall have the right in any year to
20 overextract from the Sylmar Basin an amount not to
21 exceed 10 percent of their allowed pumping, as
22 provided in Section 5 herein. The 10 percent
23 annual overextraction may continue from year to
24 year, accumulatively not to exceed 1,000 ac-ft. for
25 each city, so long as the unusual circumstances
26 persist. When the unusual circumstances cease, the
27 accumulated overextractions shall be replaced by
28 underpumping, and must be done within a 6 yr.

1 period. The amount of such underpumping will not be
2 required to exceed 10 percent of the annual allowed
3 pumping of any party.

4 The party desiring to overextract from the basin
5 shall notify the Watermaster of the circumstances
6 considered to be unusual and shall justify the need
7 for overextractions. The Watermaster shall review
8 the existence and cessation of unusual
9 circumstances and shall in his discretion approve
10 the required overextraction and replacement
11 operations.

- 12 8. Pursuant to Section 8.2.10 of the Judgment, a
13 recalculation of the safe yield can be requested by
14 any party in the event such recalculation appears
15 to be necessary in accordance with the
16 Watermaster's findings set forth in his annual
17 report to the parties and Court.
- 18 9. All parties to this stipulation may make
19 application to the Court regarding further
20 evaluation or review of the parties pumping
21 activities.
- 22 10. In any year, Los Angeles and San Fernando each have
23 the right to store water in the Sylmar Basin by
24 direct spreading or in-lieu practice
25 (underpumping). The party causing the water to be
26 stored shall have a right to extract an equivalent
27 amount of groundwater from said basin. In addition
28 to the safe yield pumping provided for herein, the

1 right to recapture stored water can be carried over
2 into successive water years.

- 3 11. Provisions of this stipulation, in effect, amend
4 the Judgment entered on January 26, 1979. Specific
5 sections that are affected include the following:
6 4.2.6.2, 5.1.2.4, 5.2.2.1, 5.2.2.3, 9.5, and 10.2.
7 To the extent that any inconsistency may exist
8 between this stipulation and provisions of the
9 Final Judgment, the provisions of this stipulation
10 shall prevail.

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

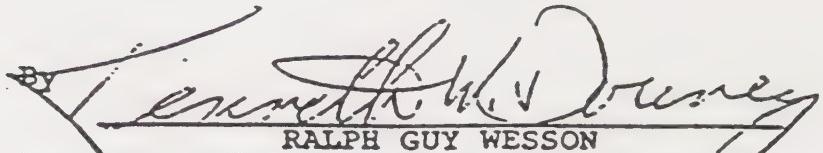
26

27

28

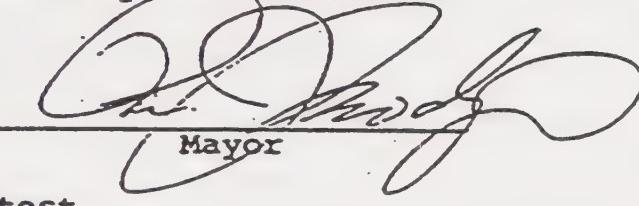
1
2 DATED: March 21, 1984
3
4
5
6

7 IRA REINER, City Attorney
8 EDWARD C. FARRELL, Chief Assistant
9 City Attorney for Water and Power
10 STEPHEN R. POWERS, JR., Senior
11 Assistant City Attorney
12 RALPH GUY WESSON, Assistant
13 City Attorney

14 
15 RALPH GUY WESSON
16 Attorneys for the City of Los Angeles
17 and its Department of Water and Power

18 APPROVED:
19

20 The City of San Fernando
21

22 By 
23 Mayor

24 Attest

25 Donald E. Penman
26 City Clerk
27

28 ARTHUR KIDMAN
RUTAN AND TUCKER
Special Counsel

29 By

30 
31 ARTHUR KIDMAN
32 Attorneys for the City of San Fernando
33

34 
35 ROGER OR CHARLES MEURER
36 MEURER ENG., INC.
37

38 
39 LAWRENCE M. DAUGHERTY
40 Attorney for Kisag. and Dean Moordigian
41

1 IRA REINER, City Attorney
2 EDWARD C. FARRELL, Chief Assistant
3 City Attorney for Water and Power
4 STEPHEN R. POWERS, JR., Senior
5 Assistant City Attorney
RALPH GUY WESSON, Assistant City Attorney
111 North Hope Street
Los Angeles, California 90012
(213) 481-6372.

6 Attorneys for Defendant

7

8 SUPERIOR COURT OF THE STATE OF CALIFORNIA
9 FOR THE COUNTY OF LOS ANGELES

10

11 THE CITY OF LOS ANGELES,) No. 650079
12 Plaintiff,) ORDER OF COURT RE SYLMAR
13 vs.) BASIN PURSUANT TO
14 CITY OF SAN FERNANDO, et al.,) SECTION 10.2 OF JUDGMENT
15 Defendants.)
16

17 Good cause appearing therefore and the court having
18 reviewed the stipulation herein presented to the Court, and
19 having fully approved the facts and settlement set forth therein,
20 it is ordered, effective October 1, 1984, that:

- 21 1. The Cities of Los Angeles and San Fernando shall be
22 limited in their pumping to bring the total pumping
23 within the safe yield of the basin, less any rights
24 exercised by the private parties, as follows:

25 City of Los Angeles - 3,105 AF/YR.

26 City of San Fernando - 3,105 AF/YR.

- 27 2. It is ordered that during years of unusual
28 circumstances (as stated in paragraph 7 of the

1 stipulation), the parties (Los Angeles and
2 San Fernando) shall have the right in any year to
3 overextract from Sylmar Basin an amount not to
4 exceed 10 percent of their allowed pumping, as set
5 forth in paragraph 1 above.

6 The 10 percent overextraction may continue from
7 year to year, accumulatively not to exceed 1,000
8 ac-ft, for each city, so long as the unusual
9 circumstances continue. When the unusual
10 circumstances cease, the accumulated overextraction
11 shall be replaced by underpumping, and must be done
12 within a 6 yr. period. The amount of such under-
13 pumping will not be required to exceed 10 percent
14 of the annual allowed pumping of any party. The
15 Wastermaster shall review the existence and cessa-
16 tion of these unusual circumstances (as detailed in
17 paragraph 7 of the stipulation) and shall approve
18 the required overextraction and replacement
19 operations.

- 20 3. Any party to this stipulation may make application
21 to the Court regarding pumping amounts stipulated
22 hereto in the event hydrologic conditions in the
23 Sylmar Basin change.
- 24 4. In any year, Los Angeles and San Fernando each have
25 the right to store water in the Sylmar Basin by
26 direct spreading or in-lieu practices
27 (underpumping). The party causing the water to be
28 stored shall have a right to extract an equivalent

1 amount of groundwater from said basin. In addition
2 to the safe yield pumping provided for herein, the
3 right to recapture stored water can be carried over
4 into successive water years.

5. The Final Judgment, entered on January 26, 1979, is
6 amended pursuant to changes set forth in this
7 stipulation. The sections of the Judgment affected
8 are listed in paragraph 11 of the stipulation.

9

10 DATED: March 22, 1984

11

12

13

14

15 HONORABLE HARRY L. HUPP
16 JUDGE OF THE SUPERIOR COURT

17

18

19

20

21

22

23

24

25

26

27

28

APPENDIX E

GUIDELINES FOR GROUNDWATER STORAGE

UPPER LOS ANGELES RIVER AREA WATERMASTER

CITY OF LOS ANGELES VS. CITY OF SAN FERNANDO, ET AL
CASE NO. 650079 — COUNTY OF LOS ANGELES

MELVIN L BLEVINS — WATERMASTER
Office Location — Room 1455
111 North Hope Street
Los Angeles, CA 90012
Telephone (213) 481 6177

MAILING ADDRESS:
ULARA Watermaster
P.O. Box 111, Rm. 1455
Los Angeles, CA 90051

January 29, 1992

Ms. Claire Trombadore
Project Manager
U.S. Environmental Protection Agency
Remedial Action Branch
Mail Stop H-6-4
75 Hawthorne Street
San Francisco, California 94105

Dear Ms. Trombadore:

San Fernando Basin Guidelines for Groundwater Storage

This letter is intended to provide guidelines on how the San Fernando Basin (SFB) should be used in the storing of groundwater relative to overall basin management. The Final Judgment (1979) for the Upper Los Angeles River Area (ULARA) provides for the use of the SFB in the storing of groundwater through the spreading of water and in-lieu pumping. These activities require the guidance of the ULARA Watermaster with the concurrence of the Administrative Committee.

The total estimated groundwater storage capacity of the SFB has been estimated to be 3,200,000 acre-feet (AF) of which a regulatory storage capacity of 350,000 AF is required to handle the wet and dry periods. Of the remaining unused storage capacity, approximately 525,000 AF is available for groundwater storage. As of October 1, 1990 the Cities of Los Angeles, Burbank and Glendale have approximately 172,000 AF, 46,000 AF, and 30,000 AF, respectively, of stored water credit, for a total of approximately 248,000 AF. Therefore, current total available storage is approximately 276,000 AF (refer to Figure 1 attached).

The Final Judgment recognizes the rights of the Cities of Los Angeles, Burbank, and Glendale to store and recapture imported and reclaimed water that has been placed in the SFB. However, storage priorities were not addressed specifically in the Judgment. The ULARA Watermaster guides the storing of water in the SFB to prevent loss of stored water. The ULARA Watermaster, with the concurrence of the Administrative Committee, has agreed that in the event of excessive rising water outflow and subsequent waste to the ocean, the basin storage would be managed such that the groundwater losses would be charged against the party last placing water in storage.

In addition to the City of Los Angeles' stored water credit, it has exclusive rights to extract and utilize the Native Safe Yield (43,660 AF/YR), as well as its imported return water (20.8 percent of Los Angeles' delivered water). Thus, Los Angeles' allowable pumping right for the water year 1990-91 is 89,827 AF. However, several parties (which include Glendale, Burbank, Van de Kamp, Toluca Lake, and Sportsmen's Lodge) have physical solution rights (totaling approximately 10,000 AF) which are chargeable to Los Angeles' water rights, reducing Los Angeles' extraction rights. In addition to the parties' physical solution pumping, there are approximately 25 non-party pumpers dealing with groundwater cleanup and dewatering activities. However, in the event of need to meet the water requirements of its inhabitants, Los Angeles has an additional right, (pursuant to its Pueblo Right) to withdraw temporarily from groundwater storage the underlying Pueblo waters, subject to an obligation to replace such water as soon as practical (Section 5.1.1.3 of Judgment).

Los Angeles' groundwater production may be further changed as a result of anticipated Superfund-related groundwater cleanup activities and the recovery of spread-reclaimed water in the SFB. Thus, it is critical that an overall groundwater management program cover the needs for groundwater storage and pumping activities in the SFB to avoid the potential for lost groundwater from the SFB. This loss of groundwater through increased rising-groundwater outflow is covered by the 1979 San Fernando Judgment.

The Cities of Glendale and Burbank have physical solution - provisions in the Judgment (Section 9.4). Their pumping of groundwater, along with that of non-parties, relative to groundwater cleanup, is guided by the ULARA Watermaster's "Policies and Procedures" (Section 2.5), appearing in Appendix E of the May 1, 1991 Watermaster Report.

Ms. Claire Trombadore

-3-

January 29, 1992

If further information is needed regarding the use and management of the SFB related to pumping or the storing of groundwater, please feel free to call me at (213) 481-6177.

Sincerely,

M L Blevins
MELVIN L. BLEVINS
ULARA Watermaster

Enclosure

c: Dr. John F. Mann, Jr. - Watermaster Consultant
Mr. Hank Yacoub - Los Angeles Regional Board

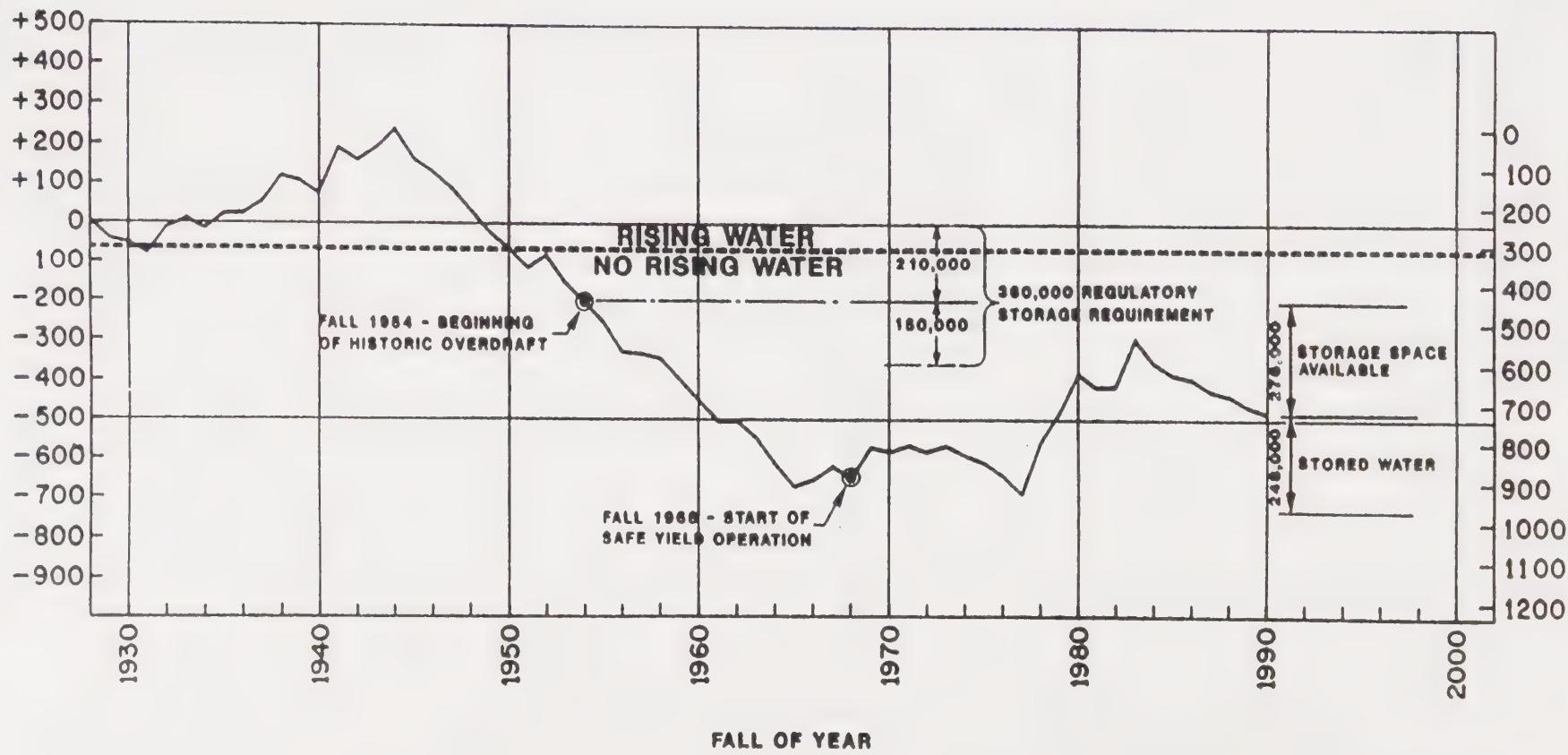
ULARA Administrative Committee Members

Mr. Fred Lantz - Burbank
Mr. Don Froelich - Glendale
Mr. Richard James - San Fernando
Mr. Robert Argenio - Crescenta Valley County Water District
Mr. Dennis Williams - Los Angeles

SAN FERNANDO BASIN
CUMULATIVE CHANGE IN GROUNDWATER STORAGE

OCTOBER 1, 1990 - STATUS OF GROUNDWATER STORAGE

CUMULATIVE CHANGE IN GROUNDWATER STORAGE
 (1,000's ACRE-FEET)



CUMULATIVE REDUCTION IN GROUNDWATER STORAGE
 (REFERENCED TO FALL 1944)
 (1,000's ACRE-FEET)

Final

APPENDIX F

STATUS SAFE YIELD CONDITIONS

F. STATUS OF SAFE YIELD CONDITIONS

F-1 San Fernando Basin – Status of Safe Yield Conditions

The Total Safe Yield for the San Fernando Basin for the Water Year 1995-96 was 97,410 AF. This consists of 43,660 AF/yr., Native Safe Yield and 53,750 AF/yr., return flow (recharge) of imported water delivered to the San Fernando Basin. It would appear that the Total Safe Yield value (97,410 AF – 1995-96) is a reasonable calculation of the recharge within the San Fernando Basin.

The City of Los Angeles, under its Pueblo Right, is entitled to pump all of the Native Safe Yield of the San Fernando Basin, given in the ULARA Judgment of January 26, 1979, as 43,660 AF/yr. The cities of Los Angeles, Glendale and Burbank all have rights to return imported water (recharge of delivered water) based on a percentage of all water delivered for consumptive use. For the Water Year 1995-96, the return water rights were as follows:

Los Angeles 43,701 AF/yr.

Glendale 5,424 AF/yr.

Burbank 4,625 AF/yr.

Total 53,750 AF/yr.

The Total Safe Yield is a variable amount, depending on the amounts of delivered water. The Native Safe Yield of 43,660 AF/yr. is not changed. This value is based on the combined recharge of precipitation, hill and mountain runoff, and native water spread in spreading basins.

There is no need to change the safe yield values at present. The accounting of the change in groundwater storage, groundwater extractions, and rising groundwater conditions support this conclusion. The 1979 ULARA Judgment provides for the changes to be made if needed in the future (Section 8.2.10 of the Judgment).

F-2 Sylmar Basin – Status of Safe Yield Conditions

The Total Safe Yield (Native and Imported Water delivered and recharge) as per the March 22, 1984 Judgment was 6,210 AF/yr. This was to be equally divided between Los Angeles and San Fernando, after subtracting the minor amounts of overlying land owners' rights. However, no subtraction has ever been made to date due to the small amounts involved (less than one AF/yr.).

At the July 16, 1996, Administrative Committee meeting, the committee approved an increase of safe yield for the Sylmar Basin based on the ULARA Watermaster's evaluation and recommendation. The new safe yield value was increased from 6,210 AF/yr. to 6,510 AF/yr. This provides up to 3,254 AF/yr. to San Fernando and Los Angeles, after over-lying party rights are subtracted (approximately one AF/yr.).

Based on the increased recharge of delivered water to the Sylmar Basin of 2,834 AF/yr., a 27 year average (1968-69 thru 1994-95), along with the Native Safe Yield value of 3,850 AF/yr., the Total Safe Yield adds up to 6,684 AF/yr. Thus, the increase from 6,210 AF/yr. to 6,510 AF/yr. appears to be justified. This increase will be monitored for a period up to ten years, with changes recommended by the ULARA Watermaster as needed.

F-3 Verdugo Basin- Status of Safe Yield Conditions

The Total Safe Yield for the Verdugo Basin (Native and Imported Water delivered and recharged) as per the January 26, 1979 Judgment is 7,150 AF/yr. The Native Safe Yield is 3,590 AF/yr. and the Imported Water delivered within the basin and recharged is 3,560 AF/yr., bringing the Total Safe Yield to 7,150 AF/yr. These values were calculated at the time of the January 26, 1979 Judgment and appear to be adequate for present (1998) conditions.

The assigned water rights of Glendale and Crescenta Valley Water District (CVWD) were based on their appropriative and prescriptive rights. Glendale's pumping rights are 3,856 AF/yr. and CVWD's pumping rights are 3,294 AF/yr. The Total Safe Yield of 7,150 AF/yr. appears to be an adequate value for present conditions based on pumping activities, change in groundwater storage and Rising Groundwater outflow values.

The historic pumping has averaged 4,780 AF/yr. over a 23-year period (1971-72 to 1993-94) which is 2,370 AF/yr. less than the Total Safe Yield (7,150 AF/yr.). The average Rising Groundwater flow from the basin for the 23-year period is 2,592 AF/yr., with an average change in storage over 500 AF/yr. This indicates that whatever has not been pumped results in flow out of the basin.

Based on the ULARA Watermaster's recommendation and approval, either Glendale or CVWD may pump the unused portion of the other party's pumping allocation, so long as the total pumping does not exceed the Total Safe Yield (7,150 AF/yr.). This modification of groundwater pumping shall be reviewed annually and requires the ULARA Watermaster's approval.

F-4 Eagle Rock Basin – Status of Safe Yield Conditions

The Total Safe Yield for the Eagle Rock Basin is up to 500 AF/yr. (Based on 13-Yr. average for Water Years 1978-79 thru 1990-91 and 3-Yr. average for 1993-96). This consists of return flows (recharge) of imported water by Los Angeles to the Eagle Rock Basin. There is no significant safe yield of native waters (Section 5.1.4.2 of the Judgment).

The total delivered water to the Eagle Rock Basin was approximately 4,270 AF in 1995-96 and averaged 4,056 AF/yr. for the 13-Yr. period. The potential recharge from this delivered water would be 832 AF/yr. (or 4,000 AF times 0.208). However, due to the confined nature of the Eagle Rock Basin, only 60% of this potential recharge would be available to the pumpers of this basin (up to 500 AF/yr.). The pumping occurs within the confined aquifers only by Sparkletts and Deep Rock under a Physical Solution provision of the ULARA Judgment (Section 9.2.1).

The Total Safe Yield of the Eagle Rock Basin belongs to Los Angeles as a matter of Water Rights (Section 2.4.2 of the Judgment). The Physical Solution Parties (Sparkletts and Deep Rock) potentially would be allowed to extract up to 500 AF/yr. each, based on the November 1, 1965 Stipulation between Los Angeles and these parties. However, since the total safe yield is only 500 AF/yr. (approximately), the ULARA Watermasters' position would be to not allow this to take place.

There is no need to change the Safe Yield value at present. The estimated recharge based on delivered water conditions is approximately 500 AF/yr. The 1979 ULARA Judgment provides for changes to be made if needed (Sections 8.2.10 of the Judgment).

APPENDIX G

SAFE YIELD FACT SHEETS

SAFE YIELD FACT SHEET

SAN FERNANDO BASIN

SAN FERNANDO BASIN
BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS*

I. DESCRIPTION OF GROUNDWATER BASIN (SFB)

- A. Total Watershed Area - 329,000 acres (514 sq. mi.) - Plates 1 and 6
- B. Groundwater Basin Area - 112,000 acres (175 sq. mi.) - Plates 2 and 4
- C. Hill and Mountain Area - 217,000 acres (339 sq. mi.) - Plate 6
- D. Maximum Depth of Alluvium - At least 1,200 feet
- E. Total Groundwater Storage Capacity - 3,200,000 acre-feet (AF)
- F. Volume of Stored Groundwater - 2,400,000 AF (October 1, 1995)
- G. Volume^{**} of Usable Stored Groundwater - approximately 1,500,000 AF

II. AVERAGE RECHARGE TO BASIN

- A. Total Recharge (Safe Yield) - 100,000 AF per year (AF/yr) or 138 cubic feet per second (cfs)
- B. Sources of Recharge:
 1. Approximately 44 percent is recharge from precipitation and runoff (Native Safe Yield - 43,660 AF/yr).
 2. Approximately 56 percent is from return flows (recharge) from imported water applied to lawns, etc. - (56,340 AF/yr).

* Prepared by Mel Blevins - ULARA Watermaster

** Volume of stored groundwater that can be effectively extracted and used is limited due to water quality and hydrogeologic considerations. When the basin groundwater levels are lowered, a poorer quality of water results and it is more difficult to extract due to the hydrogeologic characteristics of the basin.

III. HISTORIC GROUNDWATER PUMPING

A. Los Angeles' Pumping - (Plates 3, 4, and 9)

1. Prior to Trial Court Judgment of March 15, 1969 - up to 110,000 AF/yr (152 cfs). Total amount of groundwater pumped, period 1928-1929 to 1967-68 was 2,944,000 AF or average of 73,600 AF/yr.
2. Period between 1968-69 and State Supreme Court Decision of August 1, 1975 - 63,257 AF/yr.
3. Present Pumping Right - approximately 80,000 to 90,000 AF/yr (1995), plus rights to Los Angeles' stored groundwater (approximately 354,000 AF - October 1, 1994) - Plate 10.
4. Present Pumping Capacity - 248,000 AF/yr or 342 cfs (October 1995). Total Distribution Capacity (October 1995) - 530 cfs or 384,000 AF/yr - (see Plate 15).
5. Number of Pumping Wells - approximately 120.
6. Average depth of water (DTW) within most well fields - DTW is approximately 200-250 feet - Plate 8.
7. Groundwater level change related to groundwater pumping or storage of groundwater - the water level changes one foot for each 7,000 AF of pumping or storage within the basin.
8. Map showing location of pumping wells within the Upper Los Angeles River Area is attached. Map shows location of Los Angeles, Glendale, Burbank, and other parties and non-parties' wells - Plates 3, 4, 5, and 9.

B. Other Pumping Rights - (Figures 4, 6, and 8)

1. Glendale - 5,170 AF/yr, plus stored groundwater credit of 44,460 AF (October 1995).
2. Burbank - 4,910 AF/yr, plus stored groundwater credit of 60,100 AF (October 1995).
3. Physical Solution for Additional Pumping - (1979 Judgment).
 - o Glendale - 5,500 AF/yr
 - o Burbank - 4,200 AF/yr

4. Pumping for Physical Solution Cleanup and Dewatering - (1993-94) - Plate 5
 - o Physical Solution - 830 AF
 - o Nonconsumptive Use - 720 AF
 - o Groundwater Dewatering - 70 AF
5. Pumping by all parties and non-parties, period between 1981-82 and 1993-94 (13-year average - 91,700 AF/yr).

IV. WATER QUALITY IN BASIN - (1993-94 DATA)

- A. Eastern portion of San Fernando Basin (where most groundwater is pumped for water supply) - hardness is approximately 170 to 190 and total dissolved solids (TDS) is 290-330 parts per million (ppm).
- B. Western portion of San Fernando Basin (pumping for dewatering and groundwater cleanup only) - hardness is approximately 400 to 700 ppm and TDS is approximately 600 to 1,500 ppm.
- C. Future Pumping from San Fernando Basin - the groundwater pumped from the eastern portion of the San Fernando Basin either meets drinking water standards or is being treated as to the volatile organic compounds (VOC) present. Nitrates in the shallow groundwater zone may exceed standards (45 ppm), but since groundwater is either blended or extracted from lower zones, there does not appear to be a significant problem.
- D. Beginning in 1980, as a result of California Department of Health Services requested testing of the groundwater, it was found that VOC contamination was in the groundwater beneath large areas of the SFB. The primary contaminants are solvents Trichloroethylene (TCE) and Perchloroethylene (PCE), widely used in industries such as metal plating, machine degreasing, and dry cleaners. TCE and PCE have been detected above the State Maximum Contaminant Level (MCL) of 5 parts per billion in over 50 percent of the San Fernando Valley production wells. Also, Nitrates have been detected in the groundwater of the SFB in excess of the MCL of 45 ppm. Nitrates (NO_3) are the result of past agricultural practices and/or septic-cesspool systems (for the areal extent of these contaminants refer to Plates 11, 12, and 13).

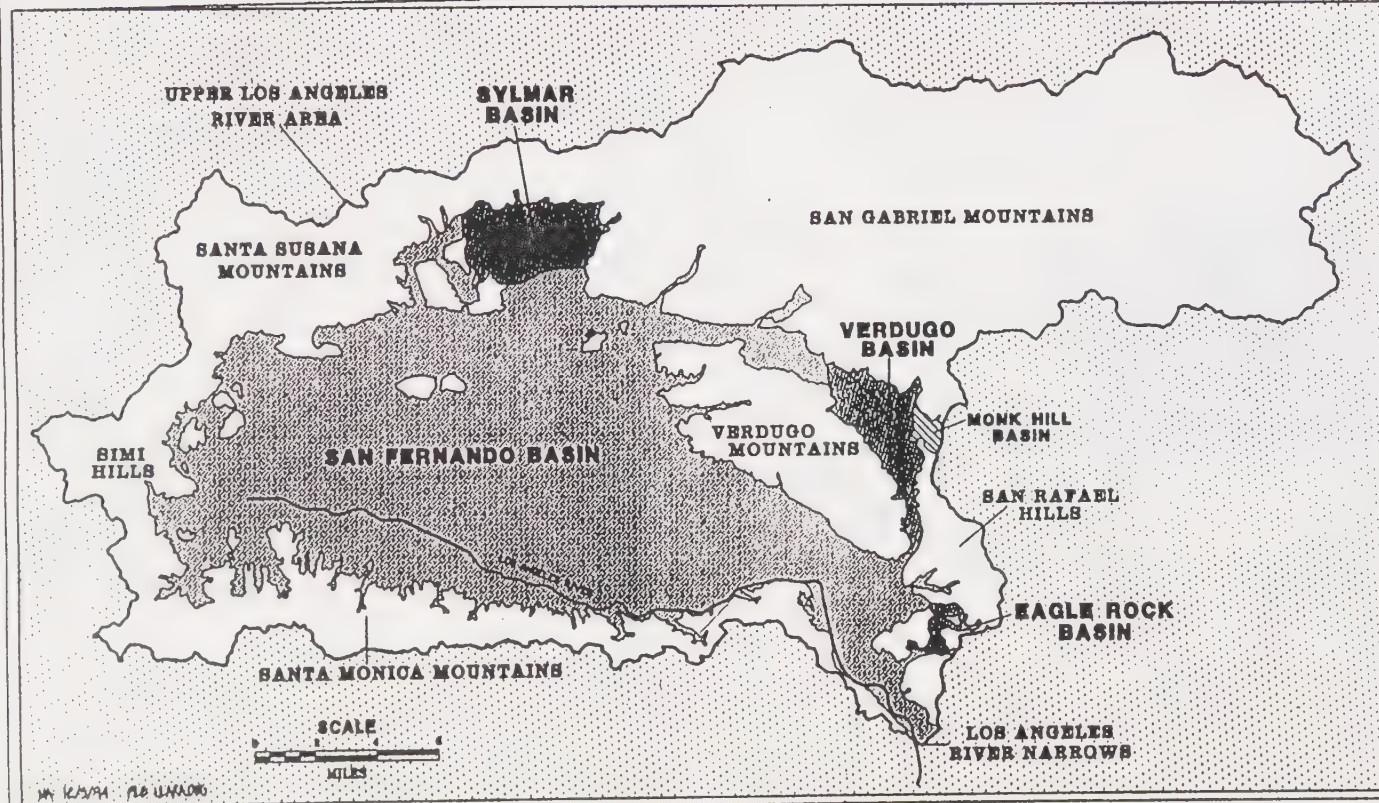
V. SPREADING BASINS (see Attached Table - Plate 7)

A. Los Angeles County Department of Public Works

1. Pacoima Spreading Grounds - (Plates 7 and 14)
 - o Wetted Area - 107 acres
 - o Long Duration Infiltration Rate - 40 cfs.
 - o No special problems in spreading activities for recharge.
 2. Hansen Spreading Grounds - (Plates 7 and 14)
 - o Wetted Area - 110 acres
 - o Long Duration Infiltration Rate - 60 cfs.
 - o Special constraints in spreading activities - percolation rates drop off due to high groundwater levels; restriction by the Los Angeles Regional Water Quality Control Board regarding potential inflow of groundwater to Bradley West Landfill.
 3. Other Spreading Grounds - Lopez and Branford - (see Attached Table - Plates 7 and 14)
- B. Los Angeles Department of Water and Power
1. Tujunga Spreading Grounds (Plates 7 and 14)
 - o Wetted Area - 90 acres
 - o Long Duration Infiltration Rate - 100 cfs.
 - o Special constraints regarding spreading activities - concern potential for water to flow into Sheldon-Arleta Landfill and potential for methane gas to develop during spreading.
 2. Headworks Spreading Grounds - (Plates 7 and 14)
 - o Wetted Area - 30 acres
 - o Long Duration Infiltration Rate - 30 to 35 cfs.

- Special constraints regarding spreading activities - as water is spread high groundwater levels reduce the rate of infiltration. The get-a-way (underflow) from the basins is limited due to hydrogeologic conditions.

718a-FACT.DOC

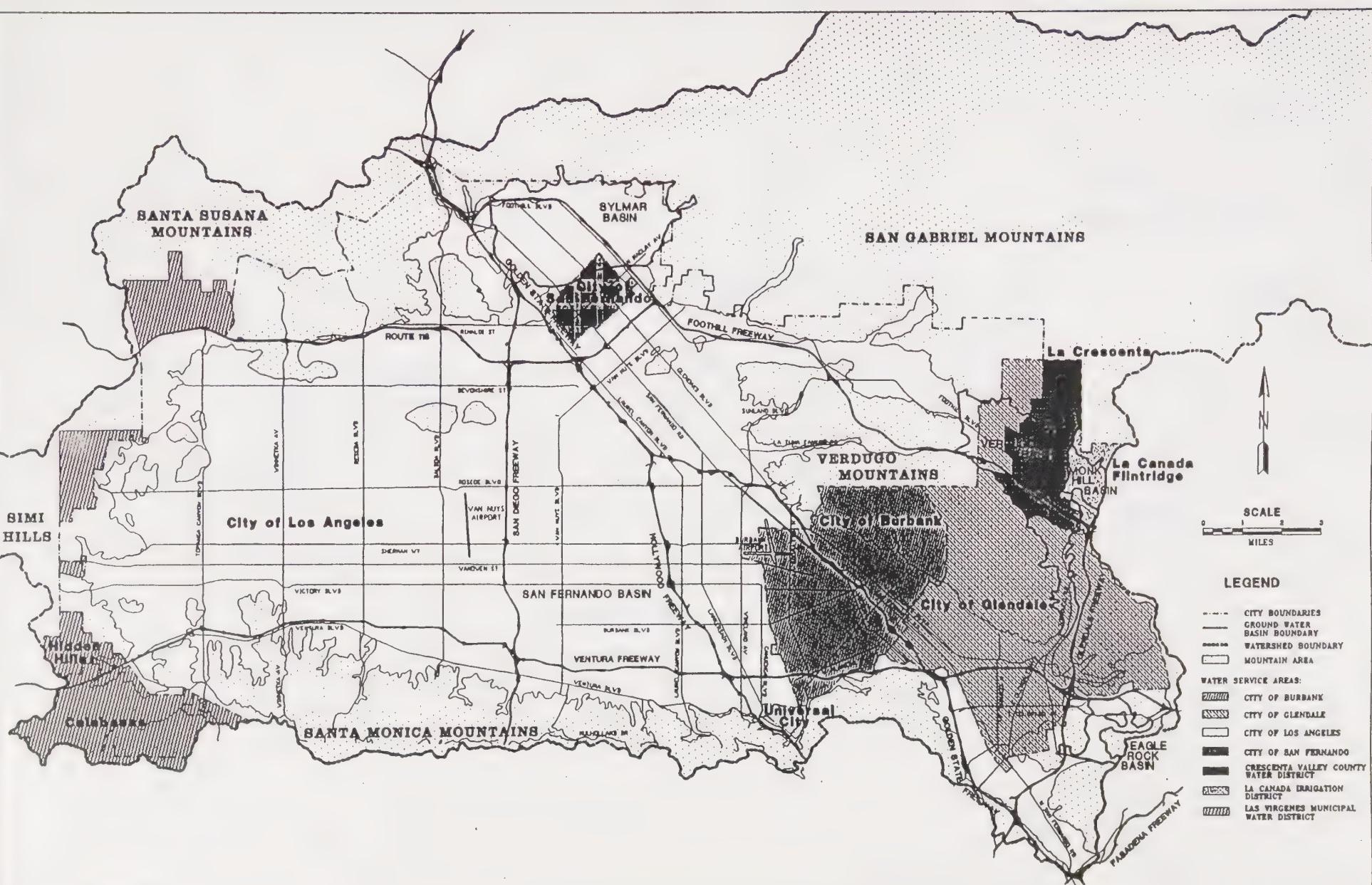


ULARA Watermaster
Report

Upper Los Angeles River Area: Vicinity and Location Map



PLATE
1



MAP 10/21/1994 FILE SERIALIZED

UPPER LOS ANGELES RIVER AREA
LOCATION OF WELLS
AND
HYDROLOGIC FACILITIES

LEGEND

- I-B-E-3 IMPEDIMENT TO GROUNDWATER FLOW
- ◆ ◆ ◆ GROUNDWATER CASCades
- ◆ ◆ ◆ QUESTIONABLE IMPEDIMENT OR GROUNDWATER CASCade
- ◆ CLIMATIC STATION
- ◆ SAMPLES WATER GAGE STATION
- ◆ SAMPLES WATER SAMPLING POINT
- ◆ KEY WELL USED FOR HYDROGRAPH
- ◆ ACTIVE, OBSERVATION, OR TEST WELL
- ◆ SURFACE AND GROUNDWATER DIVERSION



SCALE

6 MILES
10 KM
12,000
FEET

Rocky Mountain Water Treatment Plant

Water Treatment Plant

SANTA SUSANA MOUNTAINS

27

30

46

47

48

49

50

51

52

53

54

55

56

57

58

59

60

61

62

63

64

65

66

67

68

69

70

71

72

73

74

75

76

77

78

79

80

81

82

83

84

85

86

87

88

89

90

91

92

93

94

95

96

97

98

99

100

101

102

103

104

105

106

107

108

109

110

111

112

113

114

115

116

117

118

119

120

121

122

123

124

125

126

127

128

129

130

131

132

133

134

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

152

153

154

155

156

157

158

159

160

161

162

163

164

165

166

167

168

169

170

171

172

173

174

175

176

177

178

179

180

181

182

183

184

185

186

187

188

189

190

191

192

193

194

195

196

197

198

199

200

201

202

203

204

205

206

207

208

209

210

211

212

213

214

215

216

217

218

219

220

221

222

223

224

225

226

227

228

229

230

231

232

233

234

235

236

237

238

239

240

241

242

243

244

245

246

247

248

249

250

251

252

253

254

255

256

257

258

259

260

261

262

263

264

265

266

267

268

269

270

271

272

273

274

275

276

277

278

279

280

281

282

283

284

285

286

287

288

289

290

291

292

293

294

295

296

297

298

299

300

301

302

303

304

305

306

307

308

309

310

311

312

313

314

315

316

317

318

319

320

321

322

323

324

325

326

327

328

329

330

331

332

333

334

335

336

337

338

339

340

341

342

343

344

345

346

347

348

349

350

351

352

353

354

355

356

357

358

359

360

361

362

363

364

365

366

367

368

369

370

371

372

373

374

375

376

377

378

379

380

381

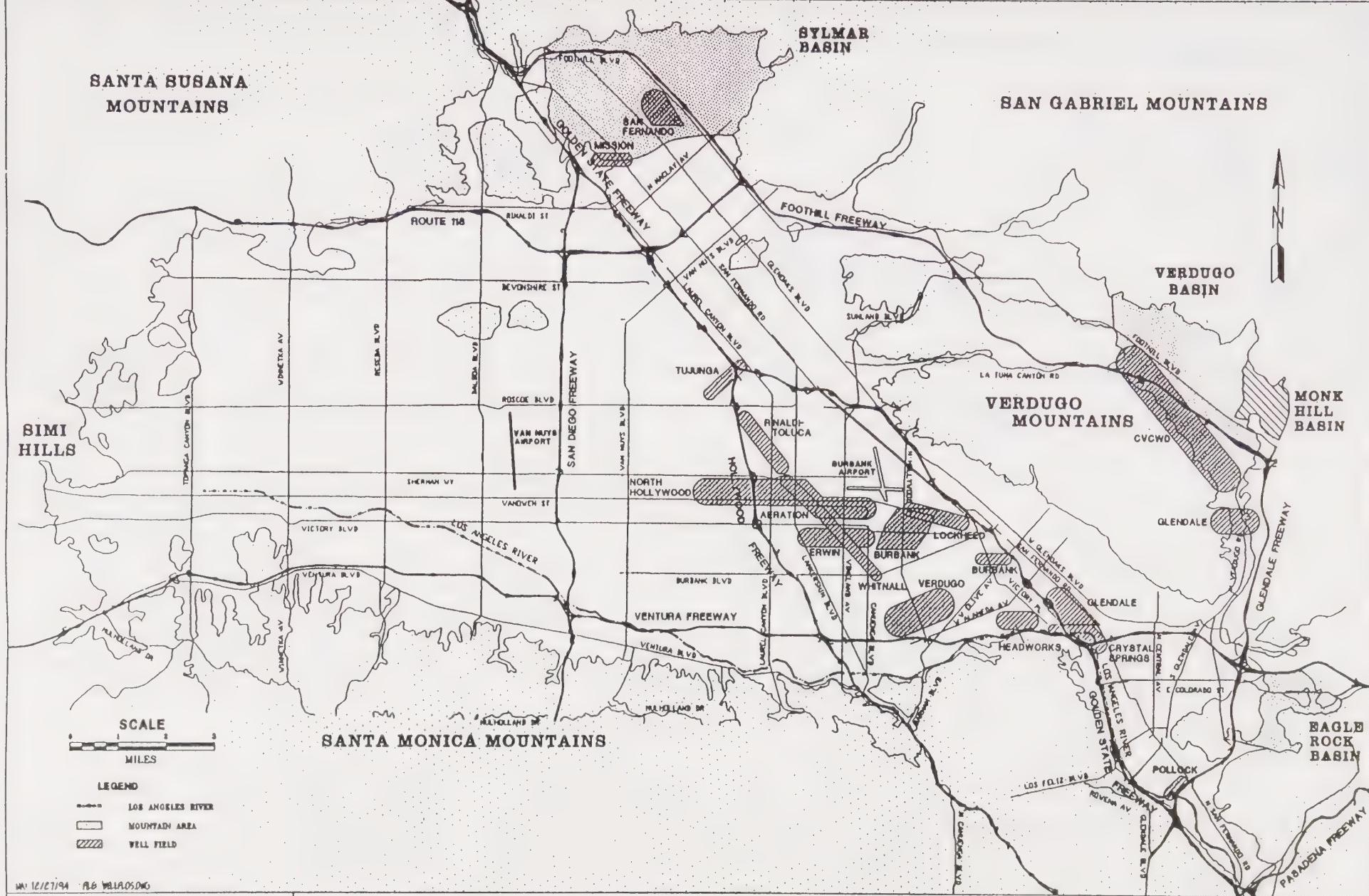
382

383

384

385

G-11



Upper Los Angeles River Area: Well Field Locations

ULARA Watermaster Report

PLATE

G-12

SAN GABRIEL MOUNTAINS



LEGEND

- LOS ANGELES RIVER
WATERSHED BOUNDARY
RESERVOIR AREA
MOUNTAIN AREA
LOCATION OF PRODUCTION

TUJU

SAN GABRIEL MOUNTAINS

BANTA SUSANA MOUNTAINS LOS ANGELES RES.

VAN NORMAN BYPASS RES.

ROUTE 118

RODNEY ST

FOOTHILL FREEWAY

18

20

N. HAGATNA

GOLDEN STATE FREEWAY

17

HANSEN FLOOD CONTROL BASIN

SUNRISE RIVER

FOOTBALL RVD

VERDUGO MOUNTAINS

1

15

22

18

10

CHATSWORTH RES.

ROUTE 118

VINESTRA AV

REEDLEY RVD

DEVONSHIRE ST

ROSCOE BLVD

ROSCE BLVD

VAN NUYS BLVD

VAN NUYS AIRPORT

SHERMAN MT

VAN NUYS BLVD

SAN DIEGO FREEWAY

13

35

5

2

AIRPORT AIRPORT

300

14

32

3

24

34

16

31

33

28

11

23

26

VICTORY BLVD

LOS ANGELES RIVER

LAKES CALABASAS

SEPULVEDA FLOOD BASIN

BURBANK BLVD

VENTURA FREEWAY

VENTURA BLVD

LAUREL CANYON BLVD

OLYMPIC BLVD

LAUREL CANYON BLVD

OLIVE AV

V. ALMADA AV

TOLUCA LAKE

MALIBU BLVD

EAGLE ROCK RES.

GLENDALE FREEWAY

12

4

19

7

1

25

29

25

21

PHILIPS COMPONENTS

22

ROBINSONS-MAY

23

ROCKWELL INTERNATIONAL

24

SEARS-ROEBUCK & CO.

25

SPORTSMEN'S LODGE, INC.

26

THRIFTY OIL

27

TOLUCA LAKE PROPERTY OWNERS ASSN.

28

TRILLIUM CORP.

29

UNOCAL CORP.

30

VALHALLA MEMORIAL PARK

31

VAN DE KAMP'S DUTCH BAKERS, INC.

32

WALT DISNEY PICTURES & TELEVISION

33

WARNER CENTER

34

WICKES CO., INC.

35

WMDSC

SIMI HILLS

SANTA MONICA MOUNTAINS

ENCINO RES.

1. 3M PHARMACEUTICALS
2. ALLIED-SIGNAL AEROSPACE CO.
3. ANGELICA HEALTHCARE SERVICES
4. AUTO STEIGLER, INC.
5. CALMAT
6. DEEPROCK BOTTLED WATER
7. FIRST FINANCIAL PLAZA SITE
8. FOREST LAWN MEMORIAL PARK
9. HARPER, CECILIA DE MILLE
10. HUGHES AIRCRAFT CO.

11. LAMCO
12. LA REINA FASHION PLAZA
13. LIVINGSTON-GRAHAM, INC.
14. LOCKHEED AIRCRAFT CORP.
15. MALIBU GRAND PRIX
16. MCKESSION WATER PRODUCTS
17. MENA, JOHN & BARBARA
18. MEURER ENGINEERING CO.
19. MOBIL OIL
20. MOORDIGIAN, KISAG

1. 3M PHARMACEUTICALS
 2. ALLIED-SIGNAL AEROSPACE CO.
 3. ANGELICA HEALTHCARE SERVICES
 4. AUTO STEIGLER, INC.
 5. CALMAT
 6. DEEPROCK BOTTLED WATER
 7. FIRST FINANCIAL PLAZA SITE
 8. FOREST LAWN MEMORIAL PARK
 9. HARPER, CECILIA DE MILLE
 10. HUGHES AIRCRAFT CO.

11. LAMCO
 12. LA RENA FASHION PLAZA
 13. LIVINGSTON-GRAHAM, INC.
 14. LOCKHEED AIRCRAFT CORP.
 15. MALIBU GRAND PRIX
 16. MCKESSON WATER PRODUCTS
 17. MENA, JOHN & BARBARA
 18. MEURER ENGINEERING CO.
 19. MOBL OIL
 20. MOORDIGIAN, KISAG

- 21. PHILIPS COMPONENTS
 - 22. ROBINSONS-MAY
 - 23. ROCKWELL INTERNATIONAL
 - 24. SEARS-ROEBUCK & CO.
 - 25. SPORTSMEN'S LODGE, INC.
 - 26. THRIFTY OIL
 - 27. TOLUCA LAKE PROPERTY OWNERS ASSN.
 - 28. TRILLIUM CORP.
 - 29. UNOCAL CORP.
 - 30. VALHALLA MEMORIAL PARK

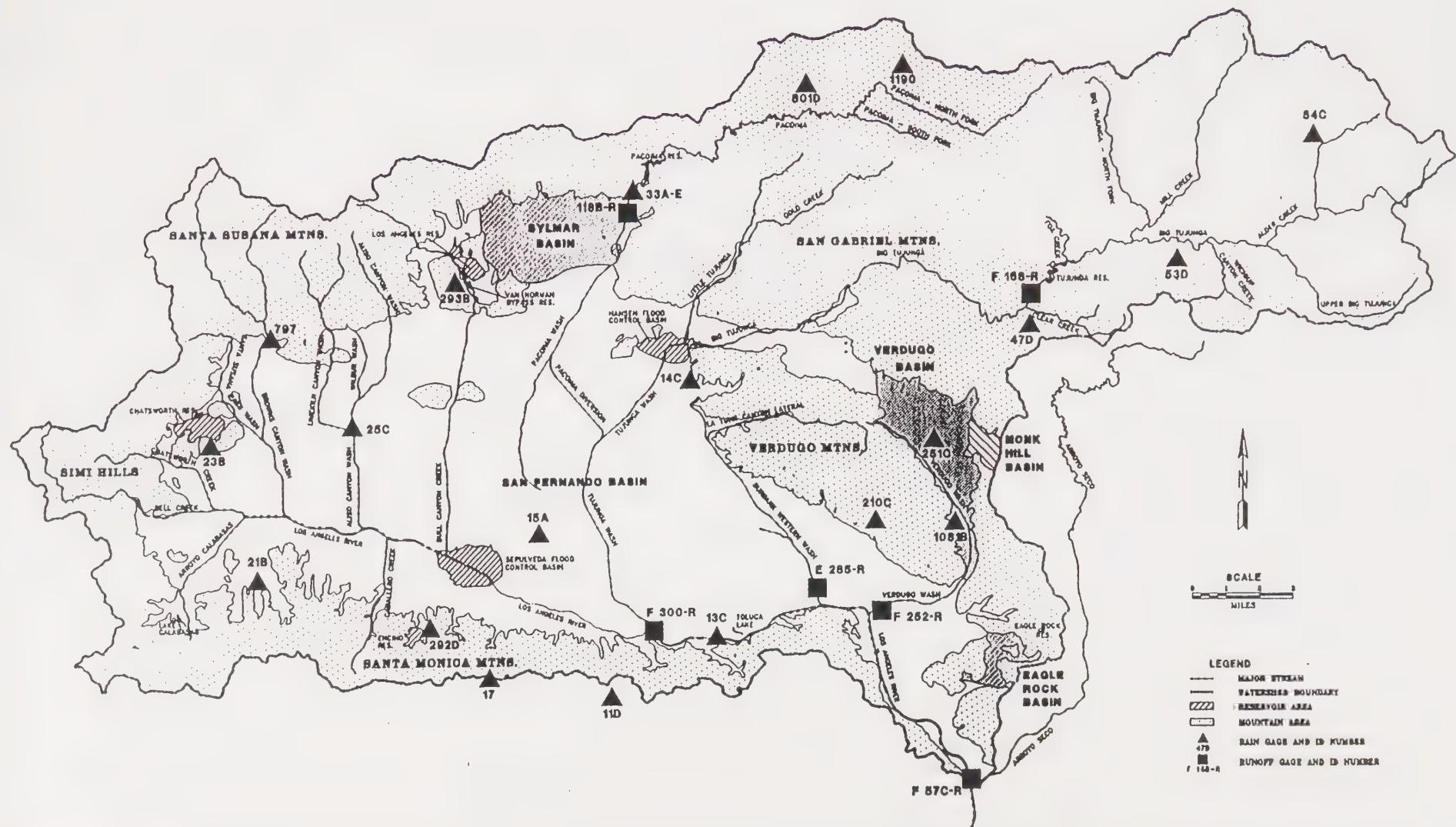
- 31. VAN DE KAMP'S DUTCH BAKERS, INC.
 - 32. WALT DISNEY PICTURES & TELEVISION
 - 33. WARNER CENTER
 - 34. WICKE8 CO., INC.
 - 35. WMD8C

12/21/94 RE WORKING

ULARA Watermaster Report

Upper Los Angeles River Area: Locations of Individual Producers

PLATE

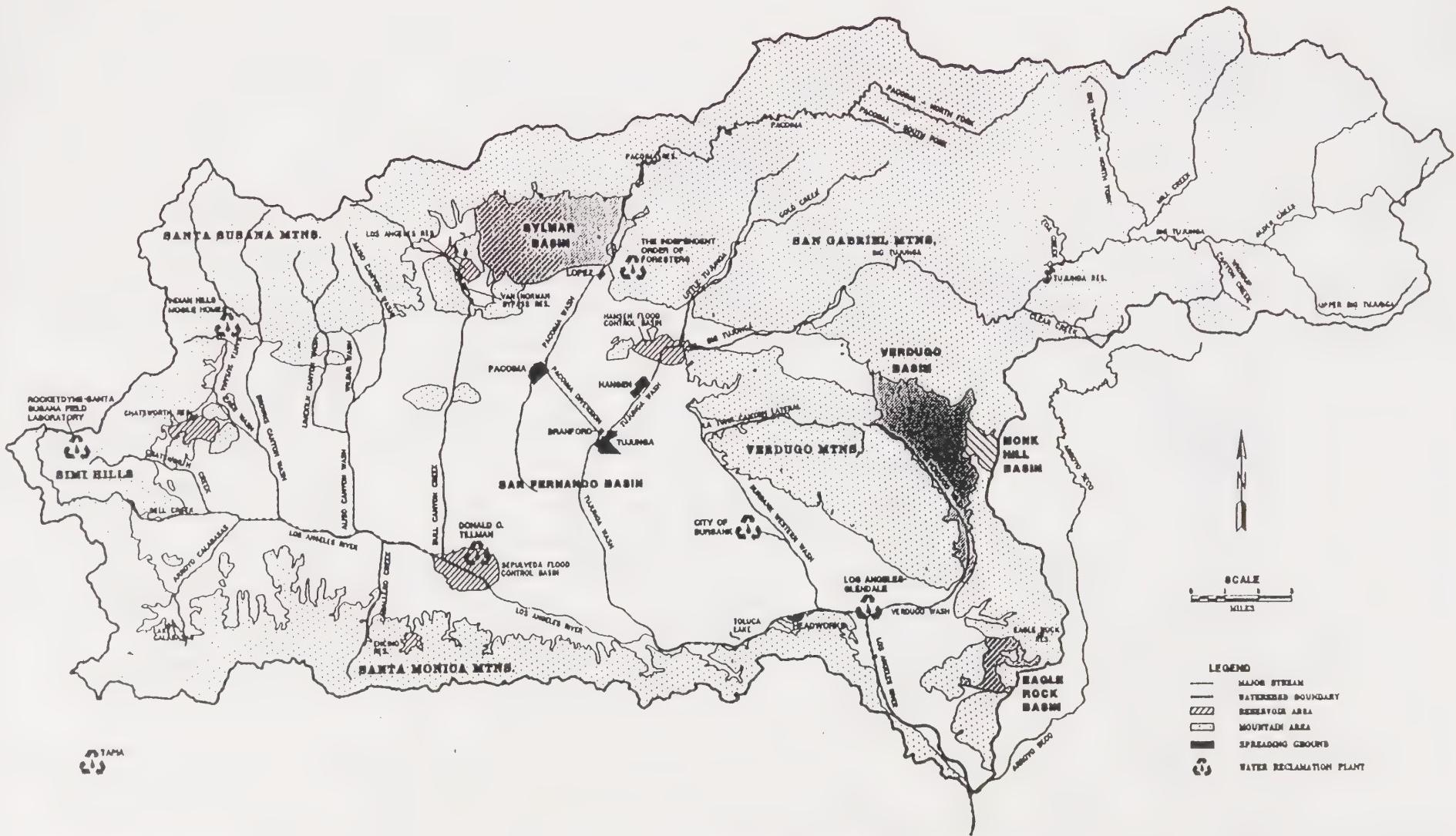


MA 12/1/1944 PLE RANGAGORU

ULARA Watermaster
Report

Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

PLATE 6



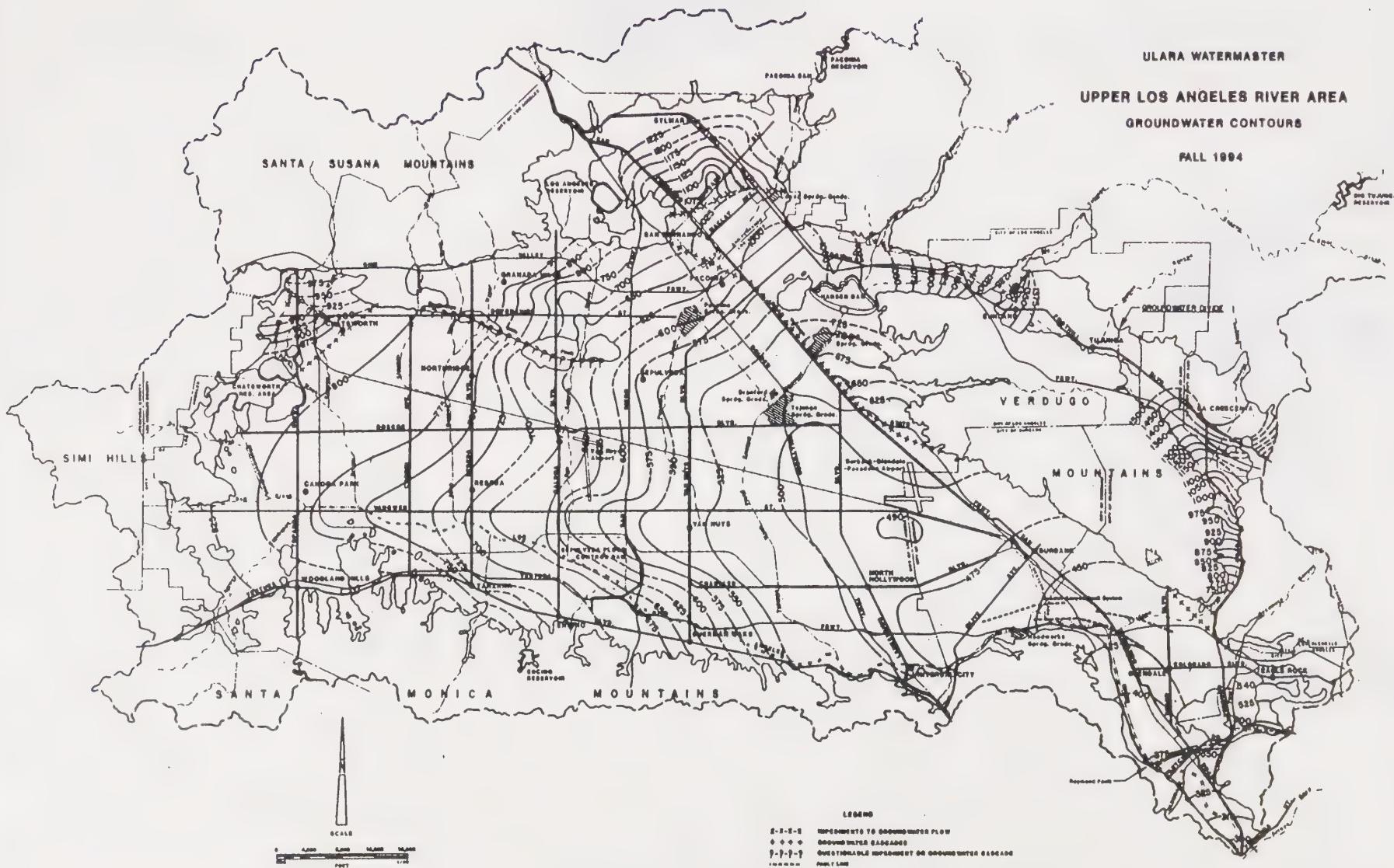
MA. 3/1/98 P&E WNSD90

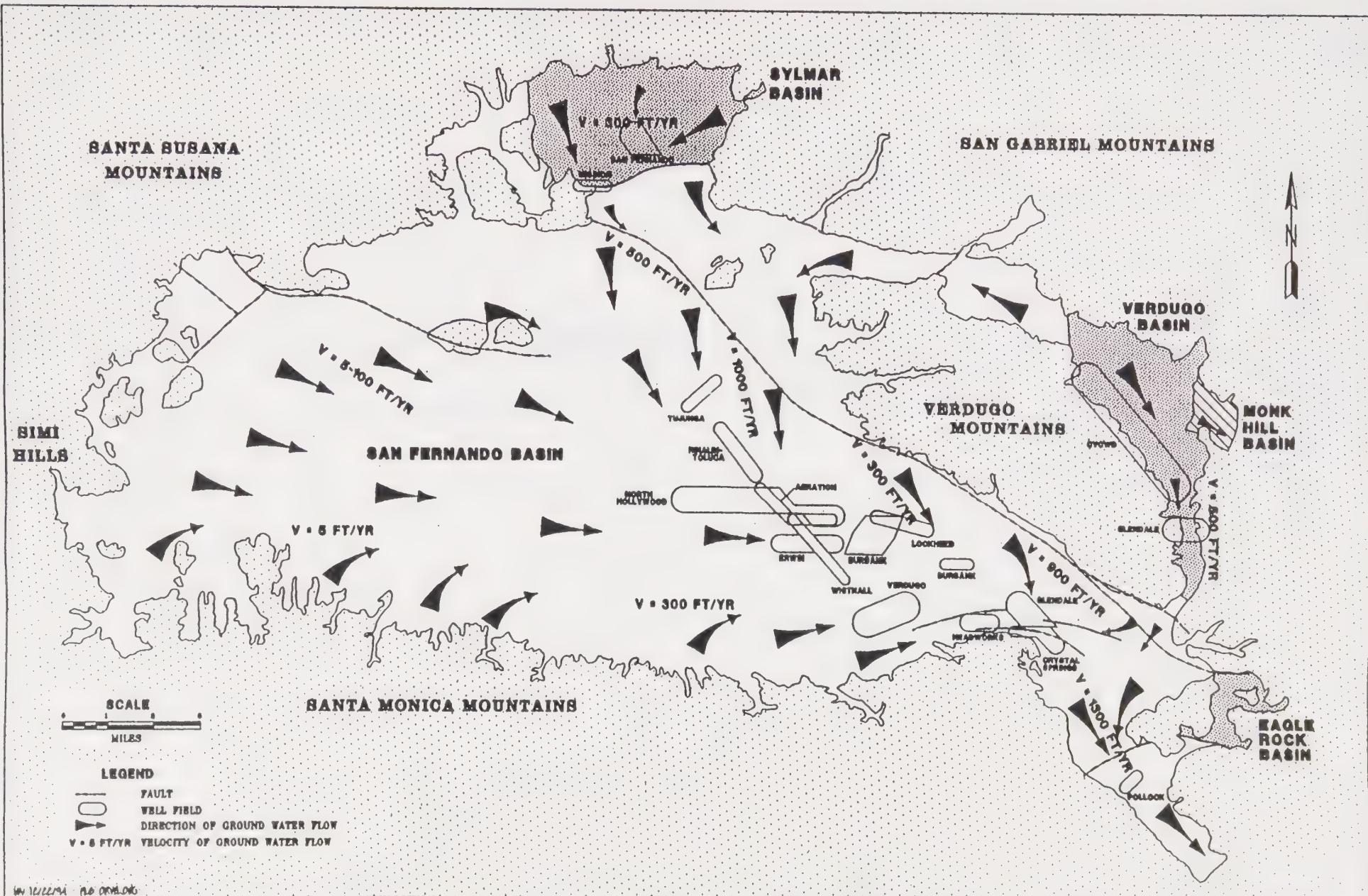
ULARA Watermaster
Report

Upper Los Angeles River Area: Spreading Basins and Water Reclamation Plants

PLATE 7

G-15





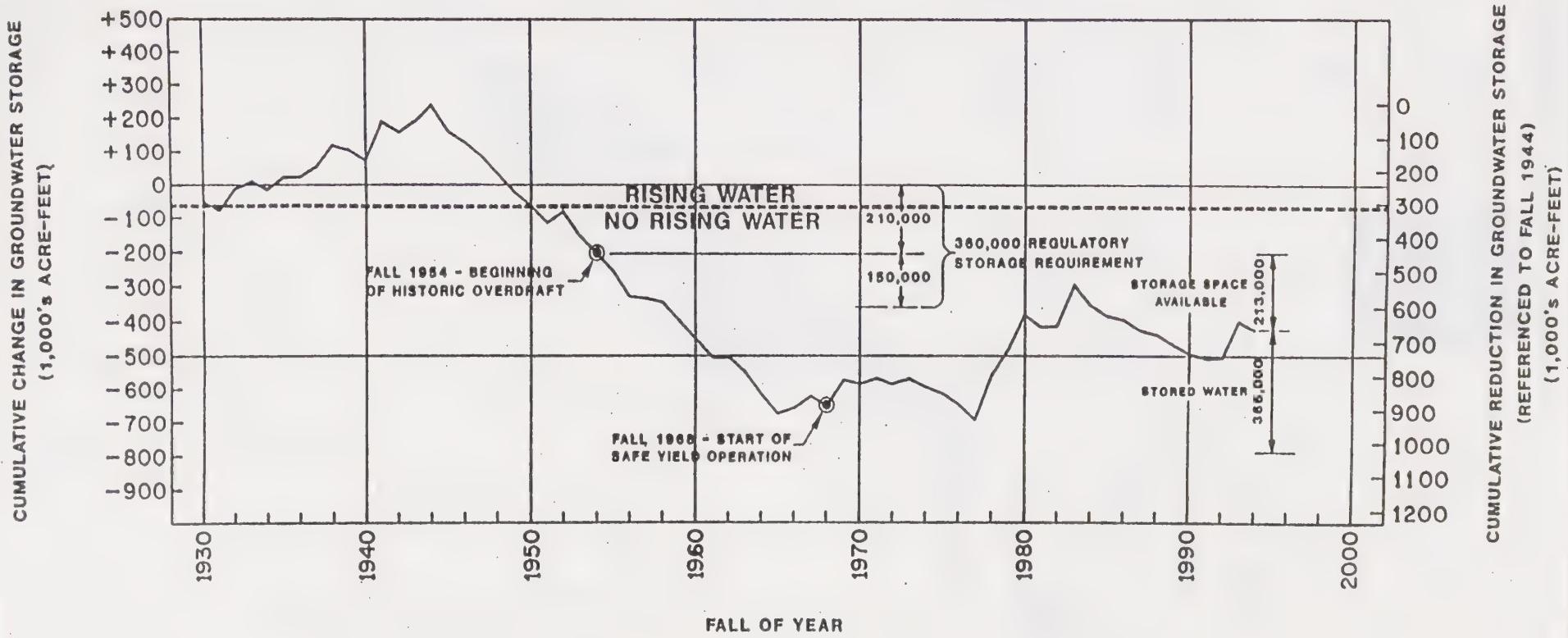
IN 12/22/94 NO DRAWING

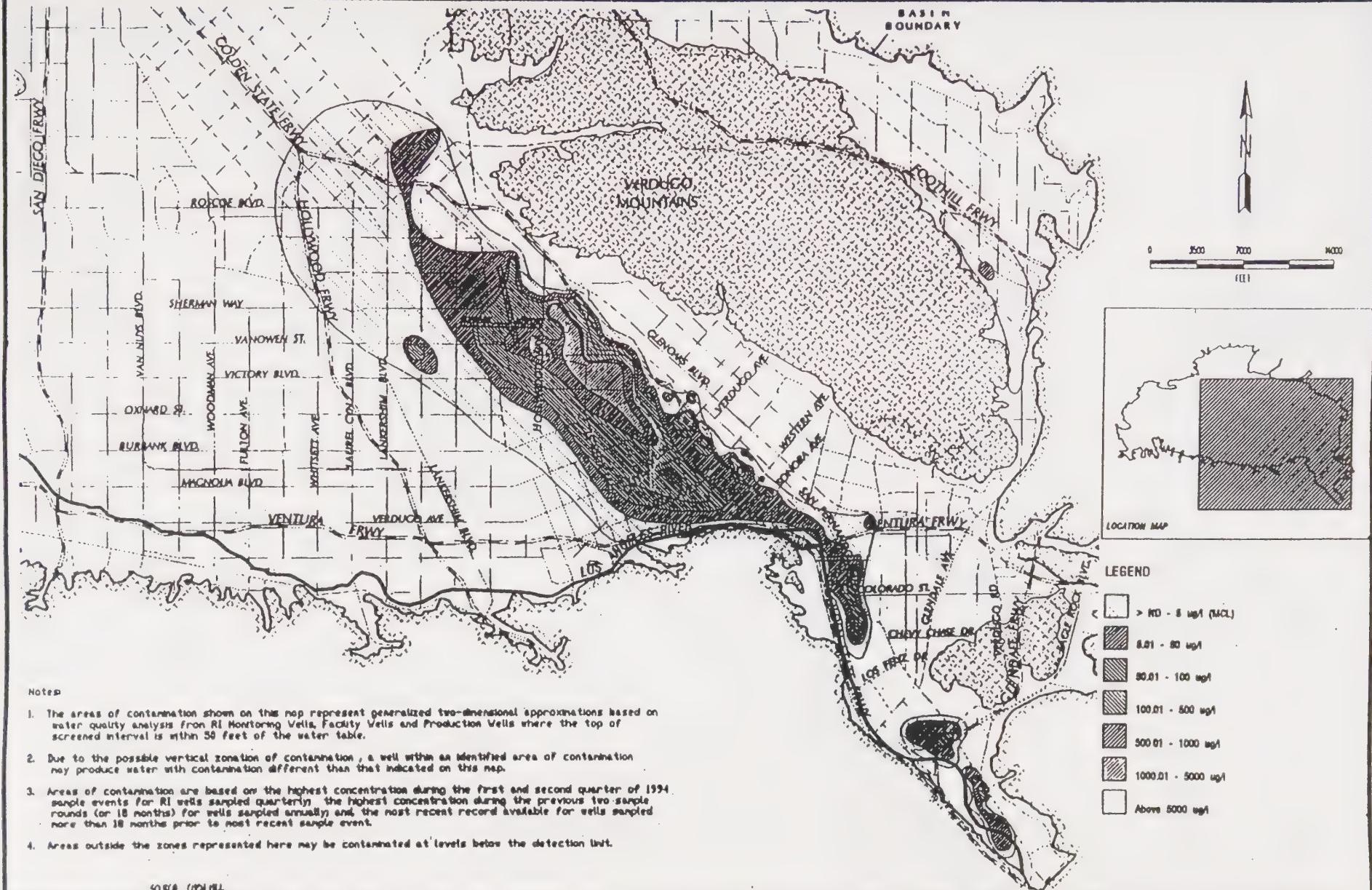
ULARA Watermaster
Report

Upper Los Angeles River Area
Estimated Directions and Velocities of Ground Water Flow

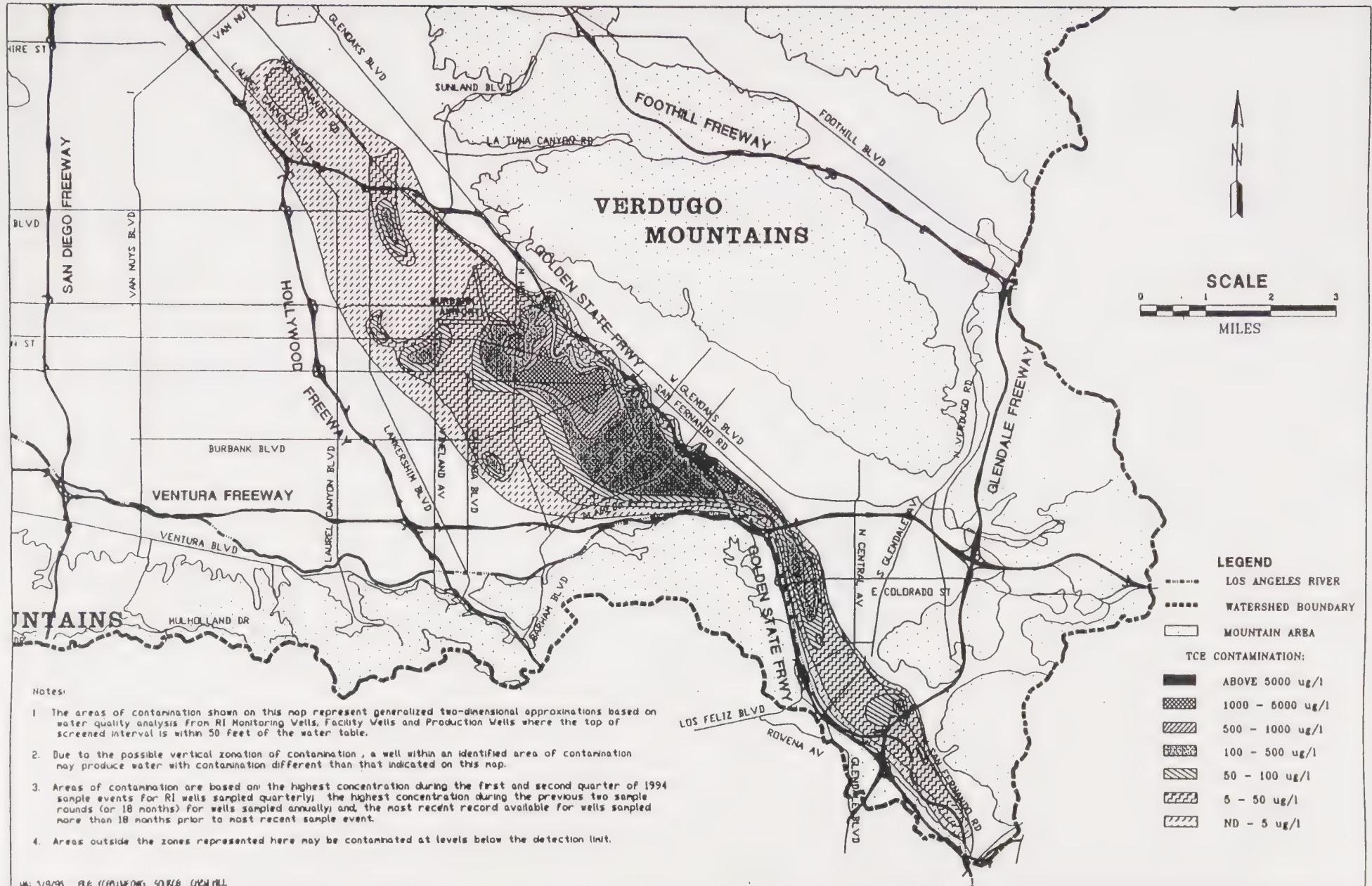
6

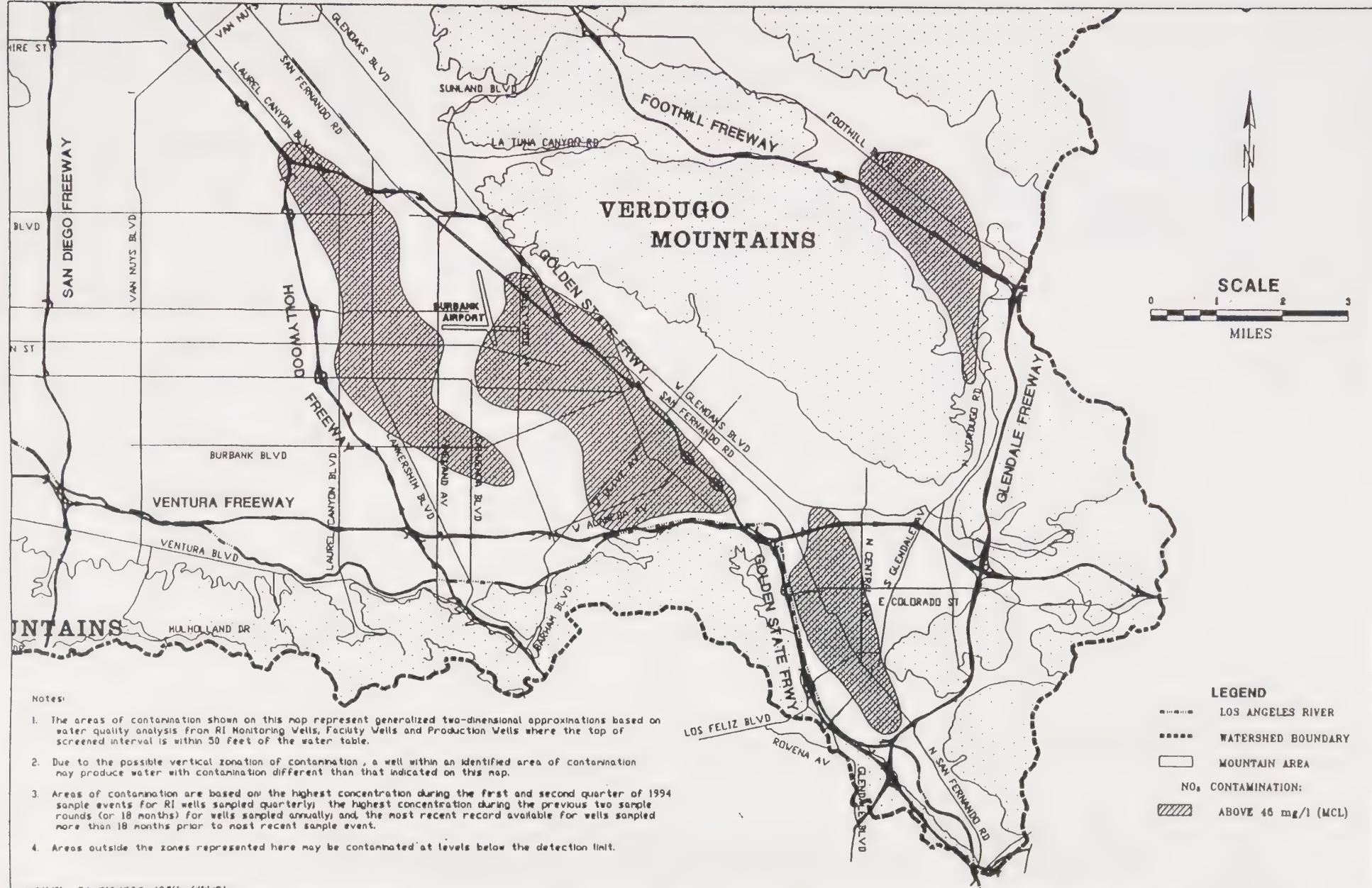
PLATE





G-19





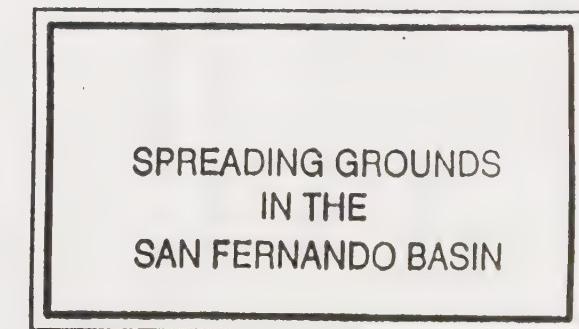
SPREADING GROUNDS	TOTAL AREA IN ACRES		BASINS		AVERAGE DEPTH IN FEET		MAXIMUM CAPACITY		INFILTRATION RATE IN CUBIC FEET PER SECOND	
	DRY	WETTED	NO.	TYPE	WATER	FREEBOARD	INTAKE IN CUBIC FEET PER SECOND	HOLDING IN ACRE-FEET	SHORT DURATION	LONG DURATION
<u>LACDPW¹</u>										
Lopez	18	13	9	SHALLOW	2	2	25	25 ²	15	7
Pacolma	169	107	12	MEDIUM	3.5	2	600	432	100	40
Hansen	156	110	19	SHALLOW	2	2	400	320	250	60
Branford	12	7	1	DEEP	35	10	1540 ³	135	1	1
<u>LOS ANGELES⁴</u>										
Tujunga	188	90	23	MEDIUM	2.4	2	400	281 - 560	388	100
Headworks	50	30	8	MEDIUM	4	2	70	120	40	30

¹ Owned and operated by Los Angeles County Department of Public Works.

² Capacity reduced due to 1971 San Fernando Earthquake

³ Outflow capacity equals Intake capacity

⁴ Owned by City of Los Angeles. Tujunga operated by Los Angeles County Dept. of Public Works. Headworks operated by the City of Los Angeles Department of Water and Power.



**POSSIBLE CONSTRAINTS AND CONCERNS
REGARDING IMPACTS OF
CONTAMINATION ON SAN FERNANDO BASIN PUMPING**

I. OBJECTIVE FOR 1992-93

To extract 125,000 AF/yr (173 cfs) of groundwater supply from the San Fernando Basin (SFB) in 1992-93.

II. OPERATIONAL CAPABILITIES (in cfs)⁴

<u>Wells</u>	<u>Current</u>	<u>7/92⁽²⁾</u>	<u>9/92⁽³⁾</u>	<u>Facility</u>	<u>Current</u>	<u>7/92⁽²⁾</u>	<u>9/92⁽³⁾</u>
Tujunga	0	0	100	NHPS to RSC (Gravity)	130	130	130
Rinaldi-Toluca	120	120	120	NHPS to UHR	0	120	120
North Hollywood (W)	54	54	54	NHPS to 830' Sys	0	20	20
North Hollywood (E)	24	24	24	NHPS to 1134'/1000' Sys	0	120	120
Aeration	4	4	4	RSC Wells to RSC	40	40	40
RSC (Whitnall, Erwin, Verdugo)	40	40	40	Pollock to 462' Sys	0	0	0
Pollock	0	0	0	Tujunga PS to 1134' Sys	0	0	100
Total Well Capacity	242	242	342	Total Distribution Capacity	170	430	530

- Notes: (1) Based on ability to meet water quality standards
 (2) North Hollywood Pumping Station operational
 (3) Tujunga Well Field and Pumping Station operational
 (4) Less than 10 ppb TCE

III. CONSTRAINTS AND CONCERNS

A. Environmental Protection Agency (EPA)

The EPA's Remedial Investigation (RI) is scheduled for completion in June-July 1992 and will characterize the San Fernando Basin (SFB) and its contamination.

The RI will have the following findings:

1. The SFB is stratified.
2. Contamination extent and severity differs by zone.
3. SFB Groundwater Flow Model will simulate gradients and flows in the SFB in response to various operations.
4. EPA and DWP will continue to monitor water quality in the SFB on a quarterly basis.

There are no immediate concerns anticipated with regard to the EPA.

B. Regional Water Quality Control Board (RWQCB)

The RWQCB is moving to amend their Basin plan, as they did in the San Gabriel Valley, to urge the ULARA Watermaster to expand its control over pumping in the SFB. The RWQCB plans to hold a public workshop in April 1992 and is pushing to finalize this amendment in the summer.

Although the RWQCB is not currently empowered to control SFB pumping, its amendment will ask that the ULARA Watermaster consider contaminant migration in its policies and encourage purveyors to pump from within contaminated areas primarily.

The RWQCB, which is partially financed by the EPA to perform source investigations, does not seem interested in considering the RI findings while it proceeds with its amendment. The RWQCB action should be a concern to the Department as it is a threat to the DWP's SFB operations now and in the future.

C. Tujunga Well Field (TWF) Area Contamination

1. Current Contaminant Levels for TJ-12
(SLDS for TCE & NO_x shows concentrations - MCL)

2. Trend of contaminant Levels for the TWF
 - a. Decline toward West (TJ-1)
 - b. Average for TWF - 2.9 ppb TCE
3. Impact of Contamination
 - a. Short-term
 - o Confine pumping to westernmost wells
 - o Monitor for increasing levels and contaminant migration
 - b. Possible Long-term
 - o Increased levels of TCE and/or NO_x, at higher levels, to entire TWF.
 - o Increased levels of TCE and/or NO_x, to Rinaldi-Toluca Wells

704-PCAC.DOC

SAFE YIELD FACT SHEET

SYLMAR BASIN

SYLMAR BASIN
BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS

I. DESCRIPTION OF GROUNDWATER BASIN

- A. Total Watershed Area - (29,600 acres or 46.3 sq. mi.) - Plates 1 and 2
- B. Basin Area - (5,600 acres or 8.8 sq. mi.) - Plate 3
- C. Tributary Hill and Mountains - (24,000 acres or 37.5 sq. mi.) - Plate 2
- D. Maximum Depth of Water-bearing Materials - (12,000 ft.)
- E. Volume of Stored Groundwater - (304,700 AF; as of Oct. 1995.)
- F. Amount of Groundwater Underflow Through Sylmar and Pacoima Notches (540 AF/yr.)

II. SURFACE HYDROLOGY

- A. Average Precipitation on Valley Fill Area - (29-yr. avg. = 8,700 AF/yr. or 18.7 in./yr.) - Plate 2. Average precipitation 1985-1995 = 17.98 in./yr.
- B. Average Precipitation on Hill and Mountain Areas - (29-yr. avg. = 49,500 AF/yr. or 24.8 in./yr.) - Plate 2.
- C. Hill and Mountain Runoff - (29-yr. avg. = 7,100 AF/yr.) - Plate 2.
- D. Surface Runoff from Impervious Areas on Valley - (29-yr. avg. = 2,700 AF/yr.)
- E. Recharge from Precipitation and Runoff - (3,850 AF/yr.) - ULARA Judgment - 1979.

III. AVERAGE RECHARGE TO BASIN

- A. Total Recharge (Safe Yield) - (6,210 AF/yr.) - ULARA Judgment - 1979.
- B. Sources of Recharge
 - 1. Native Safe Yield - from Precipitation on Valley Area and Runoff - (3,850 AF/yr.; 62% of total) - ULARA Judgment - 1979.
 - 2. Recharge (Return Flow) of Delivered Imported Water - (2,360 AF/yr; 38% of total) - ULARA Judgment 1979.

IV. HISTORIC GROUNDWATER PUMPING - Figure 1

A. City of Los Angeles - Table 1

- 1. Period 1928-29 to 1967-68 - (93,980 AF or 2,350 AF/yr.)
- 2. Period 1968-69 to 1994-95 - (80,943 AF or 2,998 AF/yr.) - Plate 4.

B. City of San Fernando - Table 1

- 1. Period 1928-29 to 1967-68 - (86,780 AF or 2,170 AF/yr.)
- 2. Period 1968-69 to 1994-95 - (80,818 AF or 2,993 AF/yr.) - Plate 4

C. Private Parties - Table 1

- 1. Meurer Engr. (Plumb & Hersch) - (21 AF or 2 AF/yr.)
- 2. Moordigian - (0 AF or 0 AF/yr.)
(Has not pumped since 1956-57 and has disposed of lands originally involved in the legal proceedings.)

V. WATER RIGHTS - JANUARY 26, 1979 - ULARA JUDGMENT

A. City of Los Angeles

1. Return Flow from Imports - (2,340 AF/yr.)
2. Share of Native Safe Yield - (1,170 AF/yr.)
(Based on Approp. Rights).
3. Total Safe Yield Pumping - (3,105 AF/yr.)
Based on stipulation of March 22, 1984.

B. City of San Fernando

1. Return Flow from Imports - (20 AF/yr.)
2. Share of Native Safe Yield - (2,680 AF/yr.)
(Based on Approp. Right)
3. Total Safe Yield Pumping - (3,105 AF/yr.)
Based on stipulation of March 22, 1984.

C. Private Parties - Overlying Rights

1. Meurer Engr. - Based on reasonable beneficial use. (Santiago Estates - successor to Meurer Engr.).
2. Moordigian - Was assigned an overlying water right on January 26, 1979. However, the lands have been subdivided and sold, and the overlying water rights abandoned.

VI. GROUNDWATER CONDITIONS

A. Cum. Change in Groundwater Storage - Table 3
Fig. 3

1. Period 1928-29 to 1967-68 - (26,100 AF or 650 AF/yr.)
2. Period 1968-69 to 1994-95 - (7,442 AF or 276 AF/yr.)

B. Cum. Departure from Safe Yield Pumping - Table 4 & Fig. 4 (6,210 AF/yr. vs. Historic Pumping in period 1954-55 to 1994-95) - (1,138 AF or 28 AF/yr.)

C. Water Level Changes

1. City of San Fernando (Well 5969D - SF #2A)
Figure 2

- Period 1969 to 1995 - (+1.50 ft.)
- Period 1984 to 1995 - (+25.50 ft.)

City of San Fernando (Well 5959 - SF #3)

- Period 1969 to 1995 - (+21.0 ft.)
- Period 1984 - 1995 - (+54.50 ft.)

City of San Fernando (Well 5969 - SF #4A)
Figure 2

- Period 1969 to 1995 (+19.81 ft.)
- Period 1984 - 1995 (+5.40 ft.)

City of San Fernando (Well 5968 - SF #7A)

- Period 1969 to 1995 (-21.81 ft.)
- Period 1984 - 1995 (+29.29 ft.)

2. City of Los Angeles (Well 4840H - Mission
Well #4) - Figure 1

- Period 1969 to 1995 - (+16.20 ft.)
- Period 1984 to 1995 - (+29.50 ft.)

City of Los Angeles (Well 4840J - Mission
Well #5) -

- Period 1969 to 1995 (+24.10 ft.)
- Period 1984 to 1995 (+46.40 ft.)

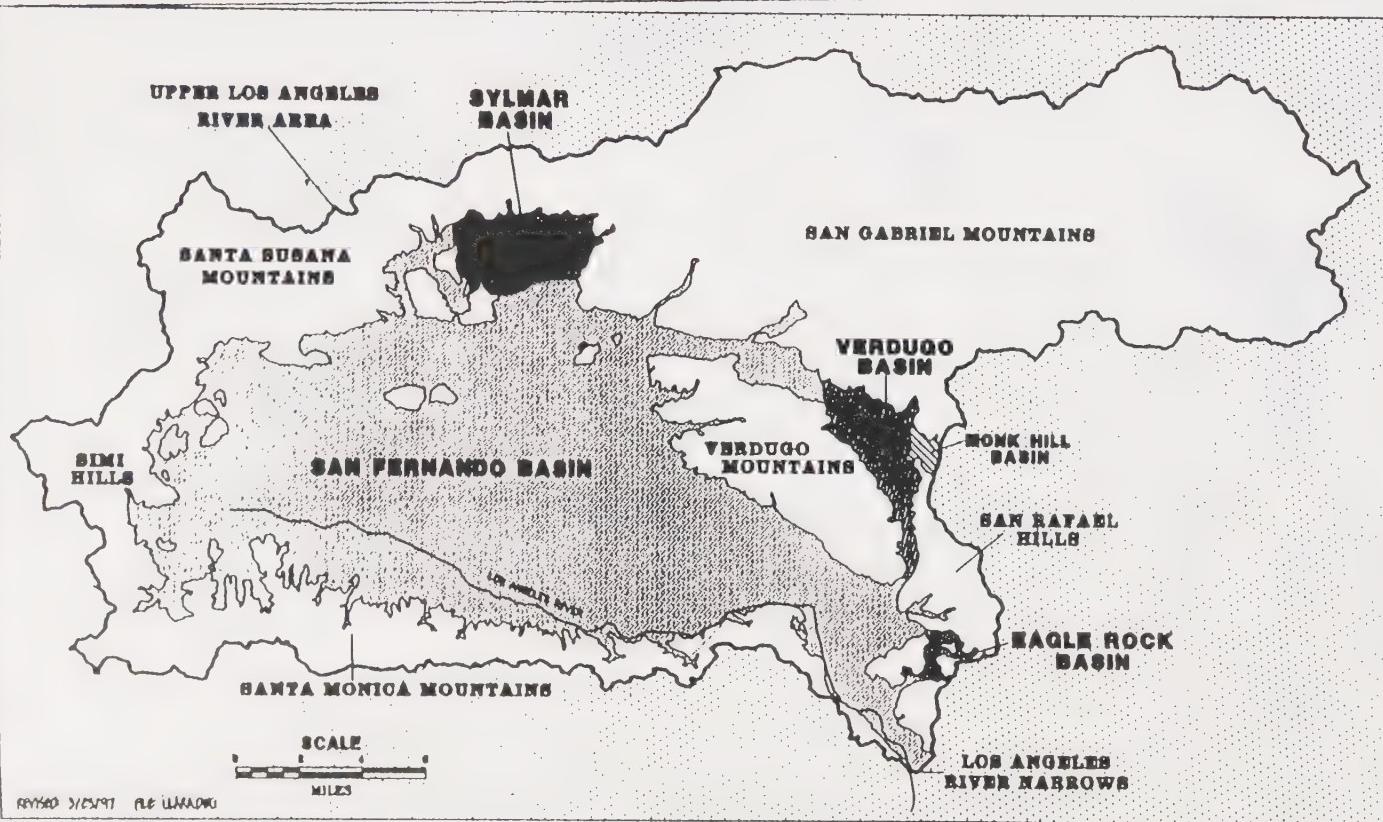
City of Los Angeles (Well 4840K - Mission
Well #6) -

- Period 1969 to 1995 (+35.30 ft.)
- Period 1984 to 1995 (+57.80 ft.)

D. Direction and Velocity of Groundwater Flow

1. Direction of Flow - Southerly flow. - Plate 5
2. Velocity - An estimated 300 ft./year. -
Plate 5

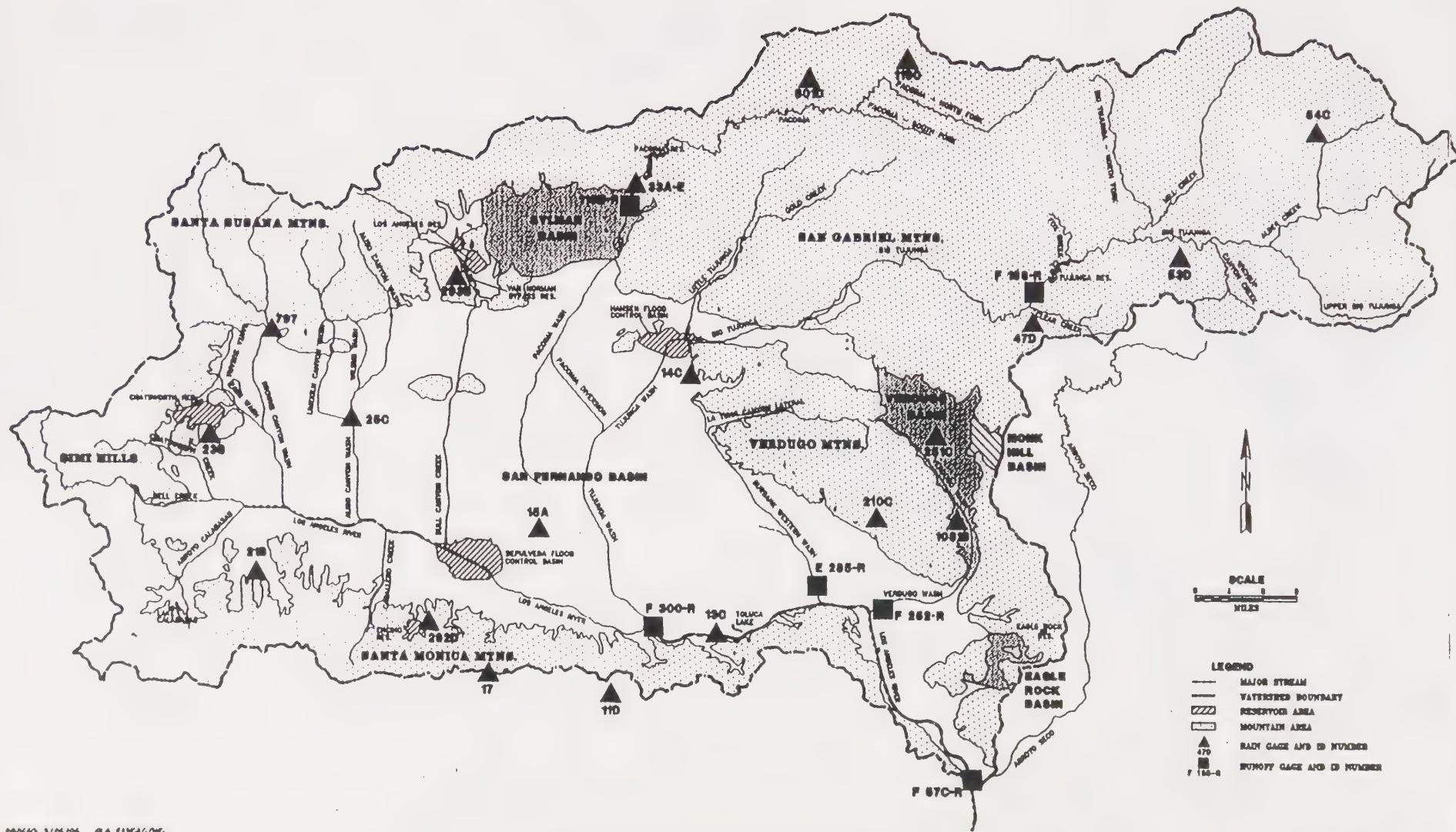
N



1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area, Vicinity and Location Map

PLATE
1

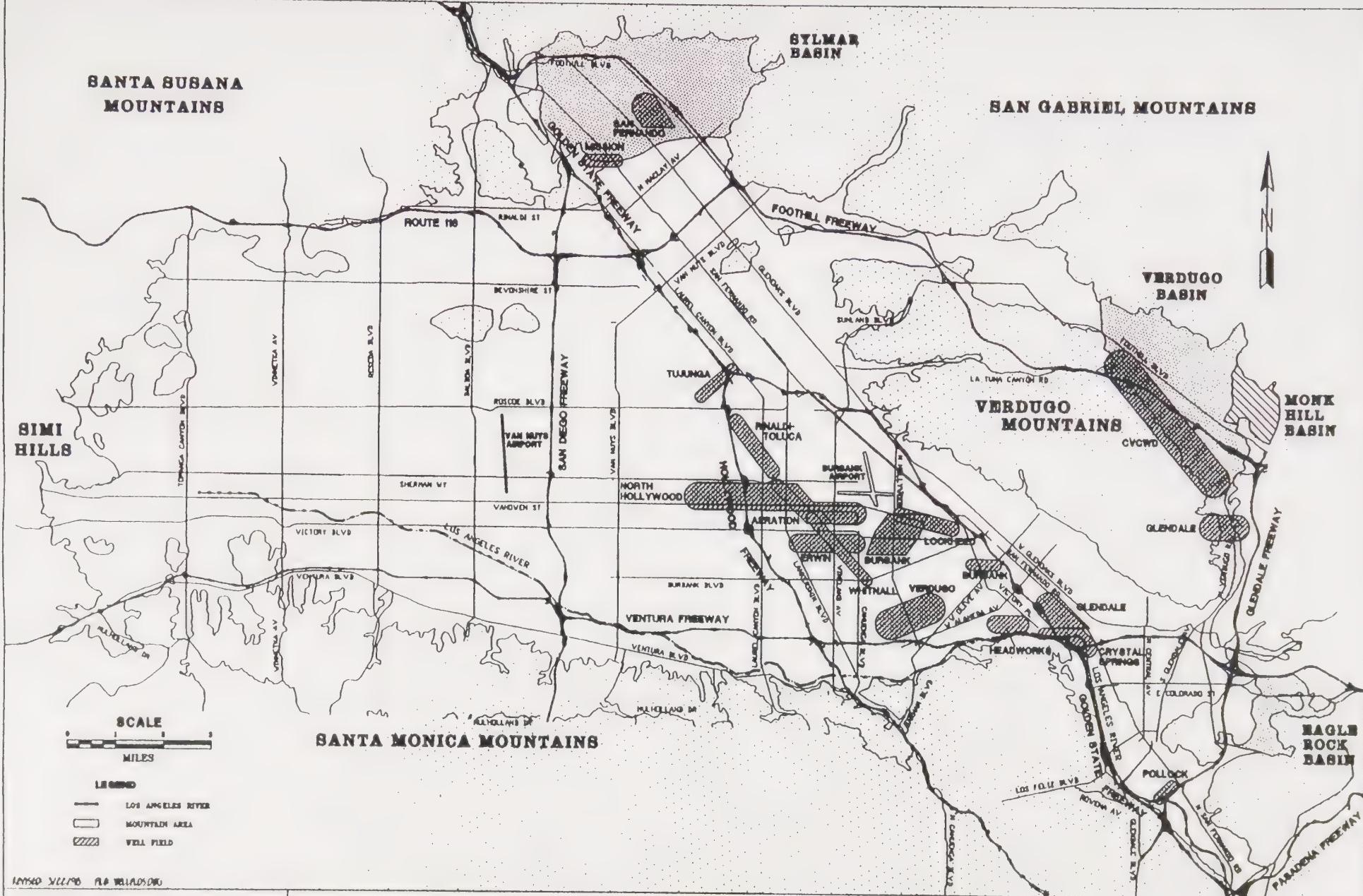


REVISED 3/20/96 PLO KARAGOGOS

1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

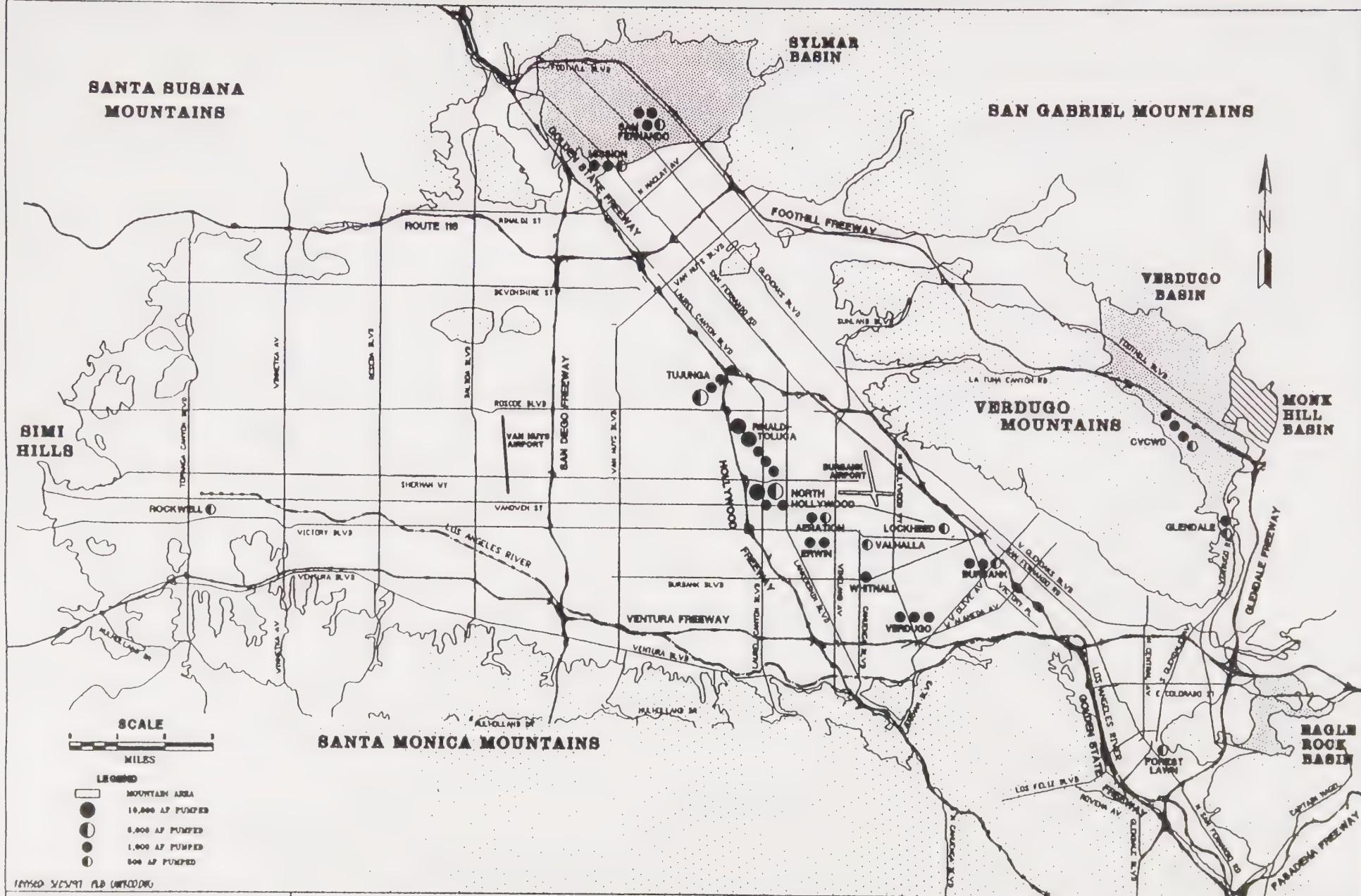
PLATE 2



1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area: Well Field Locations

PLATE
3



1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area:
Pattern of Groundwater Production

PLATE

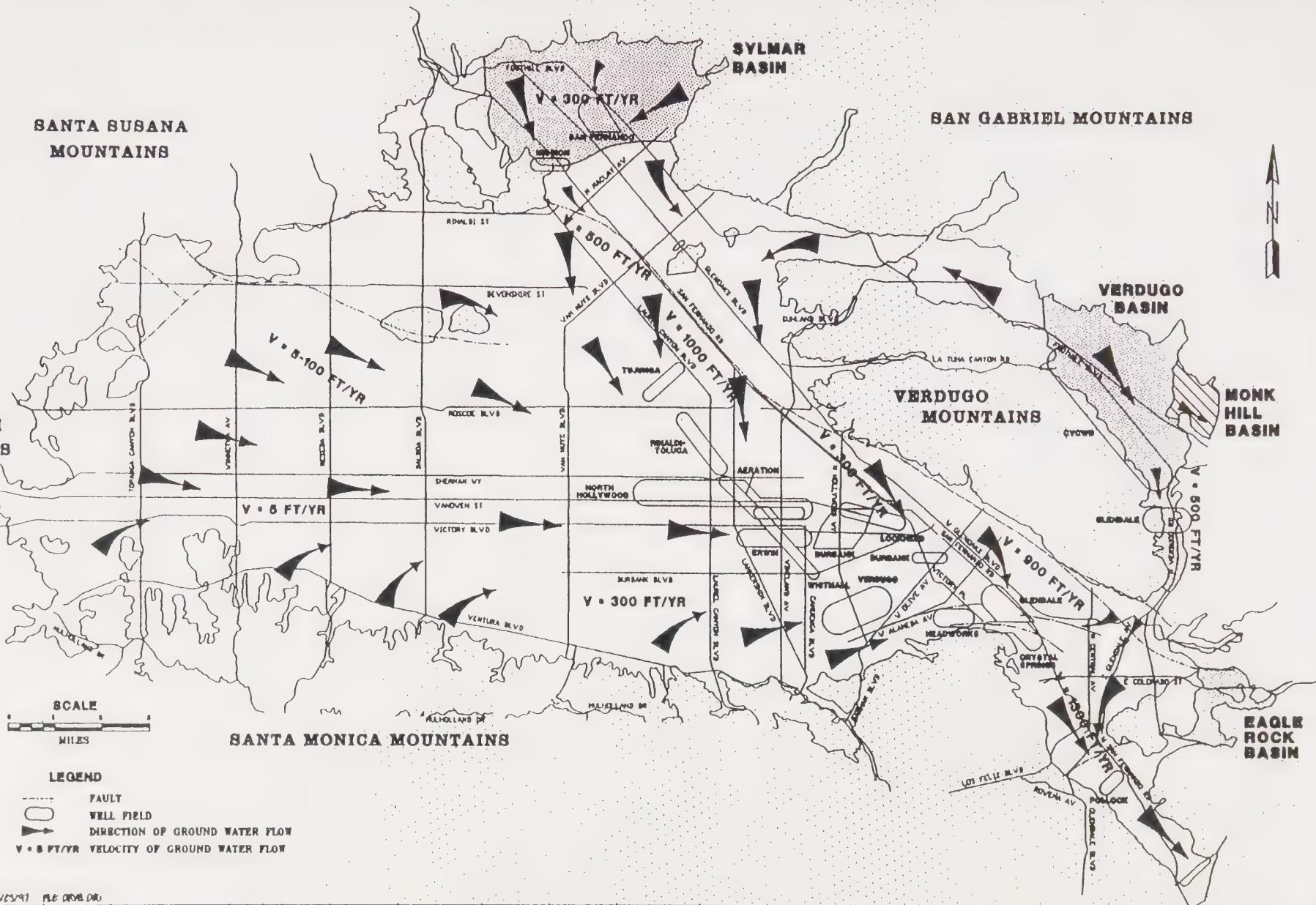


Table 1

SYLMAR BASIN
DEPARTURE FROM SAFE YIELD PUMPING
(ACRE - FEET)

WATER YEAR	SAFE YIELD	ANNUAL PUMPING	CHANGE IN STORAGE	
			ANNUAL	CUM. CHANGE
1954 - 55 ⁿ	6,210	5,630	580	580
56	6,210	5,980	230	810
57	6,210	6,020	190	1,000
58	6,210	5,470	740	1,740
59	6,210	5,170	1,040	2,780
1959 - 60	6,210	6,840	-630	2,150
61	6,210	6,560	-350	1,800
62	6,210	6,020	190	1,990
63	6,210	6,910	-700	1,290
64	6,210	6,360	-150	1,140
1964 - 65	6,210	6,370	-160	980
66	6,210	6,720	-510	470
67	6,210	6,900	-690	-220
68	6,210	7,240	-1,030	-1,250
69	6,210	5,570	640	-610
1969 - 70	6,210	6,510	-300	-910
71	6,210	4,840	1,370	460
72	6,210	6,620	-410	50
73	6,210	6,240	-30	20
74	6,210	6,420	-210	-190
1974 - 75	6,210	6,320	-110	-300
76	6,210	6,560	-350	-650
77	6,210	6,500	-290	-940
78	6,210	7,230	-1,020	-1,960
79	6,210	7,160	-950	-2,910
1979 - 80	6,210	6,100	110	-2,800
81	6,210	7,500	-1,290	-4,090
82	6,210	6,780	-570	-4,660
83	6,210	6,181	29	-4,631
84	6,210	7,013	-803	-5,434
1984 - 85	6,210	6,208	2	-5,432
86	6,210	6,241	-31	-5,463
87	6,210	6,139	71	-5,392
88	6,210	5,942	268	-5,124
89	6,210	5,459	751	-4,373
1989 - 90	6,210	5,389	821	-3,552
91	6,210	5,546	664	-2,888
92	6,210	6,118	92	-2,796
93	6,210	3,514	2,696	-100
94	6,210	5,450	760	660
1994-95 ^p	6210	5732	478	1,138

SYLMAR BASIN
GROUNDWATER EXTRACTIONS *

AC - FT

WATER YEAR	BOISE CASCADE BUILDING CO.	CHARLES T. BROWN	CHURCH OF J.C. OF L. D. SAINTS	FIDELITY FEDERAL SAVINGS & LOAN ASSN. **	CITY OF LOS ANGELES	MWD NON PARTY	CITY OF SAN FERNANDO	TOTAL
1968 - 69	15	-	319	-	2,211		3,023	5,568
1969 - 70	19	7	273	-	2,844	102	3,269	6,514
71	19	12	213	3	2,646	692	1,251	4,836
72	-	13	249	12	2,800	484	3,066	6,624
73	-	8	52	2	2,810	366	3,004	6,242
74	-	1	-	1	2,839	473	3,103	6,417
1974 - 75	-	9	-	0	2,993	183	3,135	6,320
76	-	7	-	3	2,880	-	3,667	6,557
77	-	3	-	0	3,447	-	3,047	6,497
78	-	0	-	-	4,192	-	3,040	7,232
79	-	-	-	-	3,772	-	3,392	7,164
1979 - 80	-	-	-	-	3,111	-	2,991	6,102
81	-	-	-	-	4,117	-	3,380	7,497
82	-	-	-	-	3,486	-	3,290	6,776
83	-	-	-	-	3,048	-	3,133	6,181
84	-	-	-	-	3,106	-	3,907	7,013
1984 - 85	-	-	-	-	3,130	-	3,102	6,232
86	-	-	-	-	3,075	-	3,166	6,241
87	-	-	-	-	3,113	-	3,026	6,139
88	-	-	-	-	3,133	-	2,809	5,942
89	-	-	-	-	3,259	-	2,199	5,458
1989 - 90	-	-	-	-	2,626	-	2,763	5,389
91	-	-	-	-	3,281	-	2,265	5,546
92	-	-	-	-	3,292	-	2,826	6,118
93	-	-	-	-	1,369	-	2,145	3,514
94	-	-	-	-	2,052	-	3,398	5,450
1994-95	-	-	-	-	2,311	-	3,421	5,732
TOTAL	53	60	1,106	21	80,943	2,300	80,818	144,487
27 YR Average	2	2	41	1	2,998	85	2,993	6,282

* DOES NOT INCLUDE ANY PUMPING FOR KISAG MOORDIGIAN.
LAST YEAR MR. MOORDIGIAN PUMPED GROUNDWATER WAS 1956 - 57.

** BECAME PLUMB & HERSH IN 1975 - 76 & MEURER ENGINEERING IN 1978 - 79
Santiago Estates has been pumping since about 1986.
Ellingberg Capitol, Portland OR has owned property since approximately 1994-95

SYLMAR BASIN
CHANGE IN GROUNDWATER STORAGE
(ACRE - FEET)

CHANGE IN STORAGE			
WATER YEAR	ANNUAL	CUM. CHANGE	TOTAL GROUNDWATER STORAGE
29	-60	-60	323,220
1929 - 30	290	230	323,510
31	1,020	1,250	324,530
32	2,460	3,710	326,990
33	-520	3,190	326,470
34	-80	3,110	326,390
1934 - 35	-1,130	1,980	325,260
36	-730	1,250	324,530
37	-1,380	-130	323,150
38	-1,870	-2,000	321,280
39	150	-1,850	321,430
1939 - 40	-3,660	-5,510	317,770
41	6,040	530	323,810
42	-1,610	-1,080	322,200
43	20	-1,060	322,220
44	1,490	430	323,710
1944 - 45	-300	130	323,410
46	970	1,100	324,380
47	-1,530	-430	322,850
48	-2,480	-2,910	320,370
49	-4,270	-7,180	316,100
1949 - 50	20	-7,160	316,120
51	-710	-7,870	315,410
52	3,940	-3,930	319,350
53	-2,560	-6,490	316,790
54	-780	-7,270	316,010
1954-55	-600	-7,870	315,410
56	-2,280	-10,150	313,130
57	-1,500	-11,650	311,630
58	230	-11,420	311,860
59	-1,270	-12,690	310,590
1959-60	-1,700	-14,390	308,890
61	-5,890	-20,280	303,000
62	-4,470	-24,750	298,530
63	-2,990	-27,740	295,540
64	-2,680	-30,420	292,860

CHANGE IN STORAGE			
WATER YEAR	ANNUAL	CUM. CHANGE	TOTAL GROUNDWATER STORAGE
1964 - 65	-1,740	-32,160	291,120
66	5,100	-27,060	296,220
67	3,430	-23,630	299,650
68	-2,440	-26,070	297,210
69	3,760	-22,310	300,970
1969 - 70	150	-22,160	301,120
71	3,400	-18,760	304,520
72	-1,870	-20,630	302,650
73	-2,870	-23,500	299,780
74	-520	-24,020	299,260
1974 - 75	-3,180	-27,200	296,080
76	-4,700	-31,900	291,380
77	-1,200	-33,100	290,180
78	1,020	-32,080	291,200
79	1,290	-30,790	292,490
1979 - 80	670	-30,120	293,160
81	-2,070	-32,190	291,090
82	-2,960	-35,150	288,130
83	7,320	-27,830	295,450
84	-4,430	-32,260	291,020
1984 - 85	1,810	-30,450	292,830
86	314	-30,136	293,144
87	920	-29,216	294,064
88	371	-28,845	294,435
89	-749	-29,594	293,686
1989 - 90	-340	-29,934	293,346
91	-124	-30,058	293,222
92	2,188	-27,870	295,410
93	11,069	-16,801	306,479
94	-3,317	-20,118	303,162
1994-95	1,490	-18,628	304,652

Table 2

Table 3

SYLMAR BASIN
TOTAL SAFE YIELD

(ACRE - FEET)

WATER YEAR	IMPORT RETURNED	NATIVE SAFE YIELD	TOTAL SAFE YIELD
1968 - 69	2,328	3,850	6,178
69 - 70	2,498	3,850	6,348
70 - 71	2,438	3,850	6,288
71 - 72	2,348	3,850	6,198
72 - 73	2,130	3,850	5,980
73 - 74	2,114	3,850	5,964
1974 - 75	2,194	3,850	6,044
75 - 76	2,508	3,850	6,358
76 - 77	2,173	3,850	6,023
77 - 78	2,181	3,850	6,031
78 - 79	2,407	3,850	6,257
1979 - 80	2,464	3,850	6,314
80 - 81	2,849	3,850	6,699
81 - 82	2,520	3,850	6,370
82 - 83	2,483	3,850	6,333
83 - 84	2,954	3,850	6,804
1984 - 85	3,816	3,850	7,666
85 - 86	3,368	3,850	7,218
86 - 87	4,011	3,850	7,861
87 - 88	4,014	3,850	7,864
88 - 89	3,677	3,850	7,527
1989 - 90	3,610	3,850	7,460
90 - 91	2,989	3,850	6,839
91-92	3,094	3,850	6,944
92-93	3,133	3,850	6,983
93-94	3,142	3,850	6,992
1994-95	3,076	3,850	6,926
27 YR AVG.	2,834	3,850	6,684

NOTES: COL. (1) = CITY OF L.A. + CITY OF S. F. x 0.357
 COL. (3) = COL. (1) + COL. (2)

Table 4

SYLMAR BASIN
DEPARTURE FROM SAFE YIELD PUMPING
(ACRE - FEET)

WATER YEAR	SAFE YIELD	ANNUAL PUMPING	DEPARTURE	
			ANNUAL	CUM. CHANGE
1954 - 55	6,210	5,630	580	580
56	6,210	5,980	230	810
57	6,210	6,020	190	1,000
58	6,210	5,470	740	1,740
59	6,210	5,170	1,040	2,780
1959 - 60	6,210	6,840	-630	2,150
61	6,210	6,560	-350	1,800
62	6,210	6,020	190	1,990
63	6,210	6,910	-700	1,290
64	6,210	6,360	-150	1,140
1964 - 65	6,210	6,370	-160	980
66	6,210	6,720	-510	470
67	6,210	6,900	-690	-220
68	6,210	7,240	-1,030	-1,250
69	6,210	5,570	640	-610
1969 - 70	6,210	6,510	-300	-910
71	6,210	4,840	1,370	460
72	6,210	6,620	-410	50
73	6,210	6,240	-30	20
74	6,210	6,420	-210	-190
1974 - 75	6,210	6,320	-110	-300
76	6,210	6,560	-350	-650
77	6,210	6,500	-290	-940
78	6,210	7,230	-1,020	-1,960
79	6,210	7,160	-950	-2,910
1979 - 80	6,210	6,100	110	-2,800
81	6,210	7,500	-1,290	-4,090
82	6,210	6,780	-570	-4,660
83	6,210	6,181	29	-4,631
84	6,210	7,013	-803	-5,434
1984 - 85	6,210	6,208	2	-5,432
86	6,210	6,241	-31	-5,463
87	6,210	6,139	71	-5,392
88	6,210	5,942	268	-5,124
89	6,210	5,459	751	-4,373
1989 - 90	6,210	5,389	821	-3,552
91	6,210	5,546	664	-2,888
92	6,210	6,118	92	-2,796
93	6,210	3,514	2,696	-100
94	6,210	5,450	760	660
1994-95	6210	5732	478	1,138

Sylmar Basin

Annual Rainfall Precipitation
@ Rain Gauge 33 A-E Pacoima Dam

Water Year	Annual Precipitation (in/yr)
1984-85	13.00
1985-86	21.64
1986-87	7.63
1987-88	21.60
1988-89	13.17
1989-90	9.80
1990-91	14.19
1991-92	31.66
1992-93	37.77
1993-94	11.56
1994-95	33.82
Average	19.62

100 Year mean Average (1881-1981) 19.64 in/yr

Change in Storage - Sylmar BasinCalculated Change in Storage (pursuant to the Report of Referee)

Period 1984 through 1995: +11,822 acre-feet

In-lieu Stored Water Credit (1984 - 95)

San Fernando 2,043 AF

Los Angeles 3,498 AF

Total 5,541 AF

Estimated Annual Change in Storage Apart From In-lieu (from 1984-95)

+ 11,822 AF (calculated) - 5,541 AF (in-lieu) = + 6,281 AF

6,281 AF/11 yrs. = 571 AF/YR

Table 6

SYLMAR BASIN
CITY OF SAN FERNANDO - ALLOWED PUMPING
NATIVE AND IMPORT SAFE YIELD

(ACRE - FEET)

WATER YEAR	MWD WATER IMPORT		NATIVE SAFE YIELD	TOTAL SAFE YIELD PUMPING
	DELIVERED	RETURN		
1968 - 69	0	0	2,682	2,682
69 - 70	0	0	2,682	2,682
70 - 71	484	127	2,682	2,809
71 - 72	142	37	2,682	2,719
72 - 73	0	0	2,682	2,682
73 - 74	22	6	2,682	2,688
1974 - 75	0	0	2,682	2,682
75 - 76	0	0	2,682	2,682
76 - 77	65	17	2,682	2,699
77 - 78	57	15	2,682	2,697
78 - 79	0	0	2,682	2,682
1979 - 80	214	56	2,682	2,738
80 - 81	24	6	2,682	2,688
81 - 82	0	0	2,682	2,682
82 - 83	80	21	2,682	2,703
83 - 84	31	8	2,682	2,690
1984 - 85	424	112	2,682	2,794
85 - 86	518	136	2,682	2,818
86 - 87	1,257	331	2,682	3,013
87 - 88	140	37	2,682	2,719
88 - 89	86	23	2,682	2,705
1989 - 90	53	14	2,682	2,696
90 - 91	101	27	2,682	2,709
91-92	51	13	2,682	2,695
92-93	116	31	2,682	2,713
93-94	8	2	2,682	2,684
1994-95	0	0	2,682	2,682
27 YR AVG.	137	36	2,285	2,321

Table 7

SYLMAR BASIN
CITY OF LOS ANGELES - ALLOWED PUMPING
NATIVE AND IMPORT SAFE YIELD

(ACRE - FEET)

WATER YEAR	OWENS VALLEY/MWD WATER IMPORT		NATIVE SAFE YIELD	TOTAL SAFE YIELD PUMPING
	DELIVERED	RETURN		
1968 - 69	6,520	2,328	1,168	3,496
69 - 70	6,998	2,498	1,168	3,666
70 - 71	6,473	2,311	1,168	3,479
71 - 72	6,473	2,311	1,168	3,479
72 - 73	5,965	2,130	1,168	3,298
73 - 74	5,905	2,108	1,168	3,276
1974 - 75	6,155	2,197	1,168	3,365
75 - 76	7,026	2,508	1,168	3,676
76 - 77	6,039	2,156	1,168	3,324
77 - 78	6,068	2,166	1,168	3,334
78 - 79	6,743	2,407	1,168	3,575
1979 - 80	6,746	2,408	1,168	3,576
80 - 81	7,964	2,843	1,168	4,011
81 - 82	7,059	2,520	1,168	3,688
82 - 83	6,896	2,462	1,168	3,630
83 - 84	8,253	2,946	1,168	4,114
1984 - 85	10,375	3,704	1,168	4,872
85 - 86	9,053	3,232	1,168	4,400
86 - 87	10,308	3,680	1,168	4,848
87 - 88	11,141	3,977	1,168	5,145
88 - 89	10,235	3,654	1,168	4,822
1989 - 90	10,074	3,596	1,168	4,764
90 - 91	8,297	2,962	1,168	4,130
91-92	8,615	3,076	1,168	4,244
92-93	8,660	3,092	1,168	4,260
93-94	8,793	3,139	1,168	4,307
1994-95	8,615	3,076	1,168	4,244
27 YR AVG.	7,831	2,796	1,168	3,964

NOTES: COL. (3) = COL. (2) x 35.7%
COL. (4) = 1560 AF x 3850AF/5140 AF
COL. (5) = COL. (3) + COL. (4)

SYLMAR BASIN - CITY OF LOS ANGELES MISSION WELL NO. 4 (4840H)

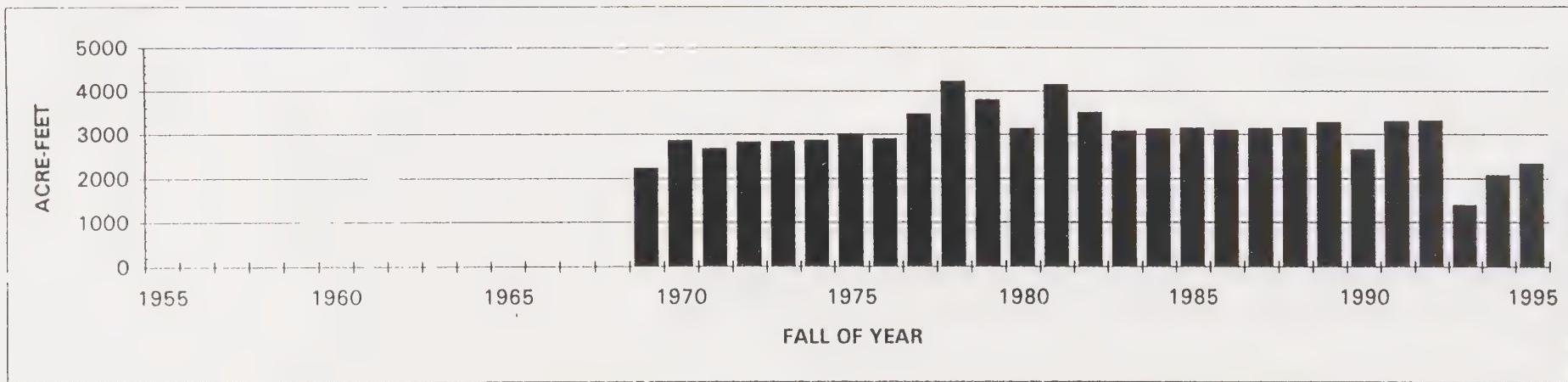
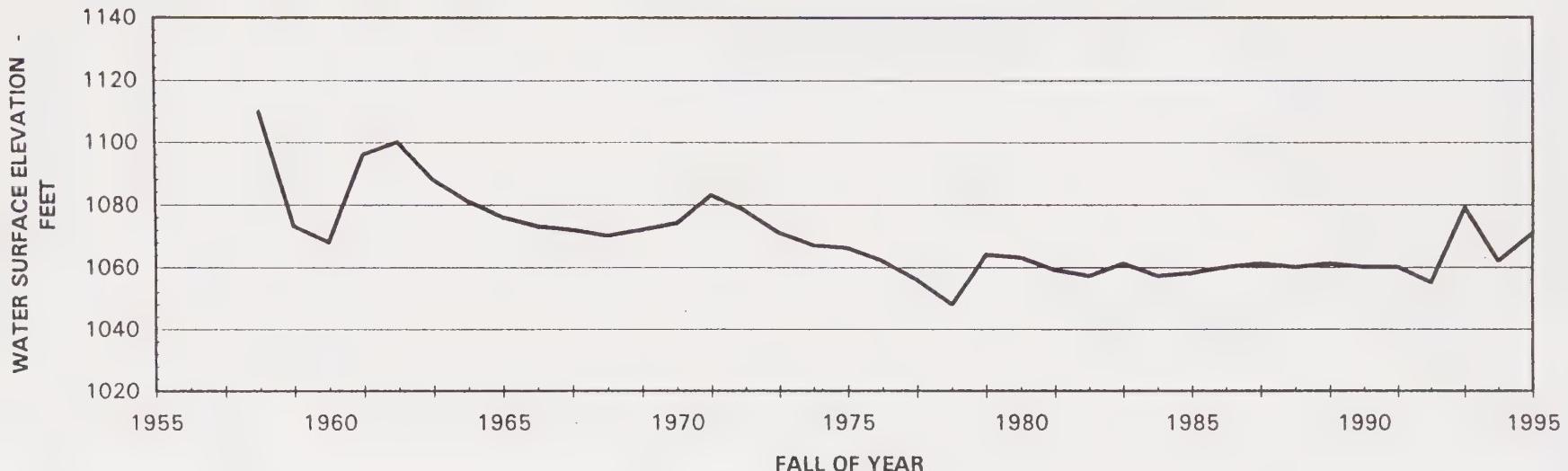
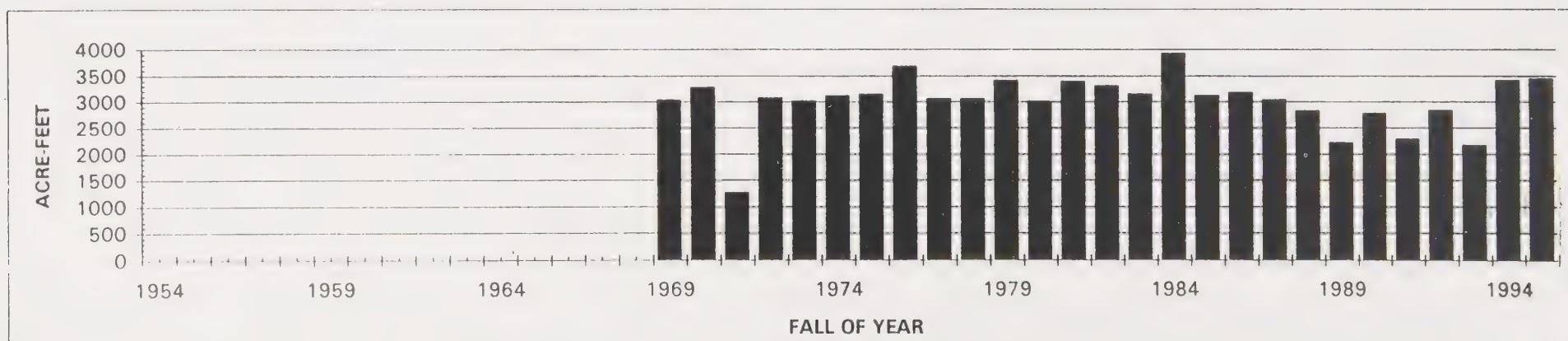
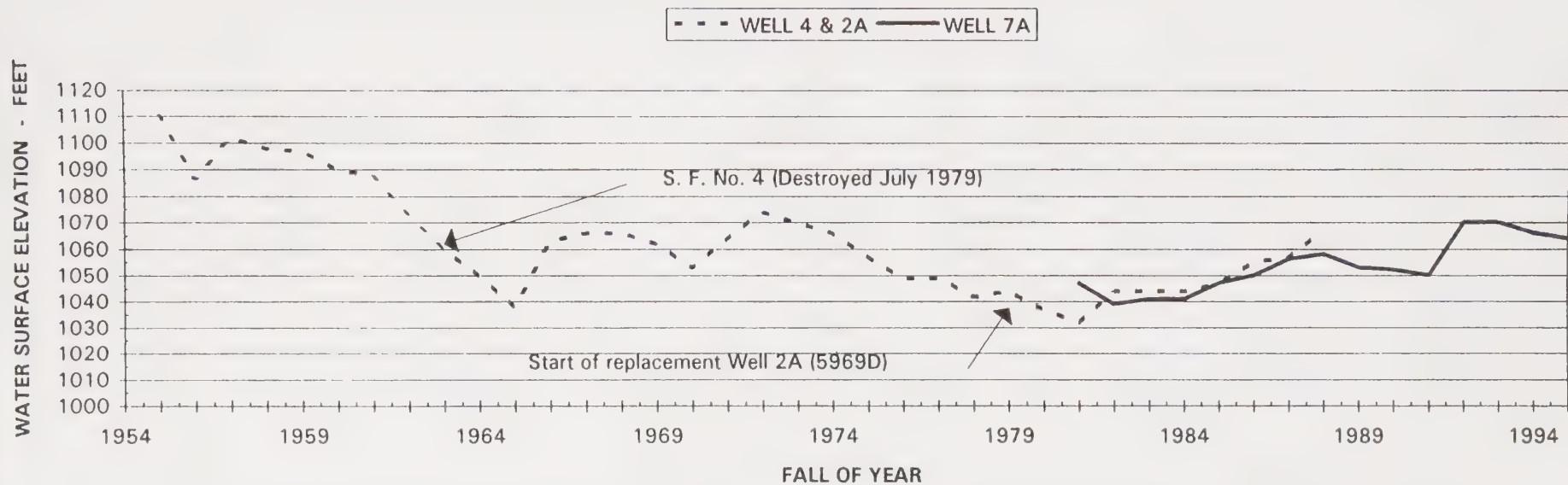


Figure 1

SYLMAR BASIN CITY OF SAN FERNANDO WELLS NO. 4 (5969) AND NO. 2A (5969D) AND NO. 7A (5868)



SYLMAR BASIN - CHANGE IN GROUNDWATER STORAGE*

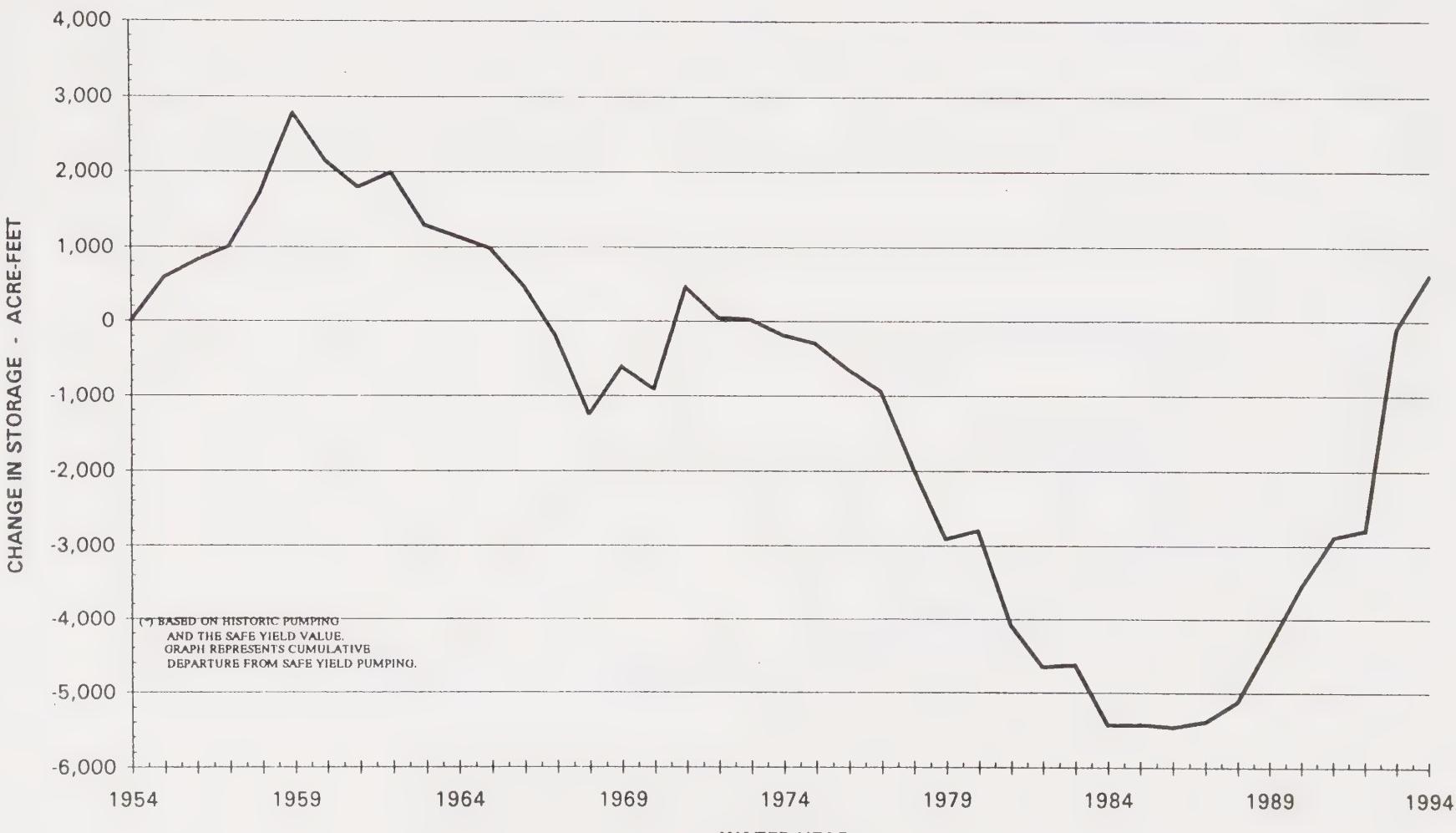


FIGURE 3

SAFE YIELD FACT SHEET

VERDUGO BASIN

VERDUGO BASIN
BACKGROUND DATA ON HYDROLOGY

I. DESCRIPTION OF BASIN

- A. Total Watershed Area - (12,800 acres or 20.0 sq. mi.)
- B. Valley Fill Basin - (4,400 acres or 6.9 sq. mi.)
- C. Tributary Hill and Mountains - (8,400 acres or 13.1 sq. mi.)
- D. Maximum Depth of Water-Bearing Materials - (500 ft.)
- E. Volume of Stored Groundwater - (108,000 AF; as of Fall 1994)
- F. Amount of Groundwater Underflow to Monk Hill Basin - (300 AF/yr.) and to San Fernando Basin (70 AF/yr.)

II. SURFACE HYDROLOGY*¹

- A. Average Precipitation on Valley Fill Area - (29-yr. avg. = 8,500 AF/yr. or 23.2 in./yr)
- B. Average Precipitation on Hill and Mountain Areas - (29-yr. avg = 16,200 AF/yr. or 23.1 in./yr.)
- C. Hill and Mountain Runoff - (29-yr.avg.= 1,000 AF/yr.)
- D. Surface Runoff from Impervious Areas on Valley - (29-yr. avg.= 2,800 AF/yr.)
- E. Recharge from Precipitation and Runoff - (3,590 AF/yr.)

III. AVERAGE RECHARGE TO BASIN

- A. Total Recharge (Safe Yield) - (7,150 AF/yr.)
- B. Sources of Recharge
 - 1. Native and Safe Yield - from Precipitation on Valley Area and Runoff - (3,590 AF/yr; 50% of total)
 - 2. Recharge (return flow) of Delivered Imported Water - (3,560 AF/yr; 50%of total)

IV. HISTORIC GROUNDWATER PUMPING

- A. City of Glendale:
 - 1. Period 1928-29 to 1967-68 - (106,520 AF or 2,660 AF/yr.)
 - 2. Period 1968-69 to 1993-94 - (63,234 AF or 2,432 AF/yr.)
- B. Crescenta Valley County Water District (CVCWD):
 - 1. Period 1928-29 to 1967-68 - (71,360 AF or 1,780 AF/yr.)
 - 2. Period 1968-69 to 1993-94 - (66,804 or 2,569 AF/yr.)
- C. Private Parties
 - 1. Last pumping by any private party was in 1964-65.

¹*29 year period used in Safe-Yield calculation and is a Standard Base Period

V. WATER RIGHTS - JANUARY 26, 1979 JUDGEMENT

- A. City of Glendale
 - 1. Prescriptive Right - (3,856 AF/yr.)
- B. Crescenza Valley County Water District
 - 1. Prescriptive Right - (3,294 AF/yr.)
- C. Private Parties - Overlying Rights
 - 1. None.

VI. GROUNDWATER CONDITIONS

- A. Cumulative Change in Groundwater Storage
 - 1. Period 1928-29 to 1967-68 - (+14,060 AF or +352 AF/yr.)
 - 2. Period 1968-69 to 1993-94 - (-1773 AF or -68 AF/yr.)
- B. Cumulative Departure from Safe Yield Pumping
 - 1. (7,150 AF/yr. vs. Historic Pumping in Period 1968-69 to 1993-94) - (55,862 AF or 2,149 AF/yr.)
- C. Water Level Changes
 - 1. Crescenza Valley County Water District (Well 5058H)
 - Period 1930 to 1969: (+34.1 ft. or +0.87 ft./yr.)
 - Period 1969 to 1994: (+64.0 ft. or +2.56 ft./yr.)
 - 2. City of Glendale (Well 3971)*²
 - Period 1933 to 1969: (+31.9 ft. or +0.89 ft./yr.)
 - Period 1969 to 1994: (+55.1 ft. or +2.20 ft./yr.)

² *From 1987 to 1994 well 3971B has been considered dry. Dirt at the bottom of the wells has prevented water level measurements. Well 3971 has been used recently for water level data.

G-50



SCALE IN FEET

14,000

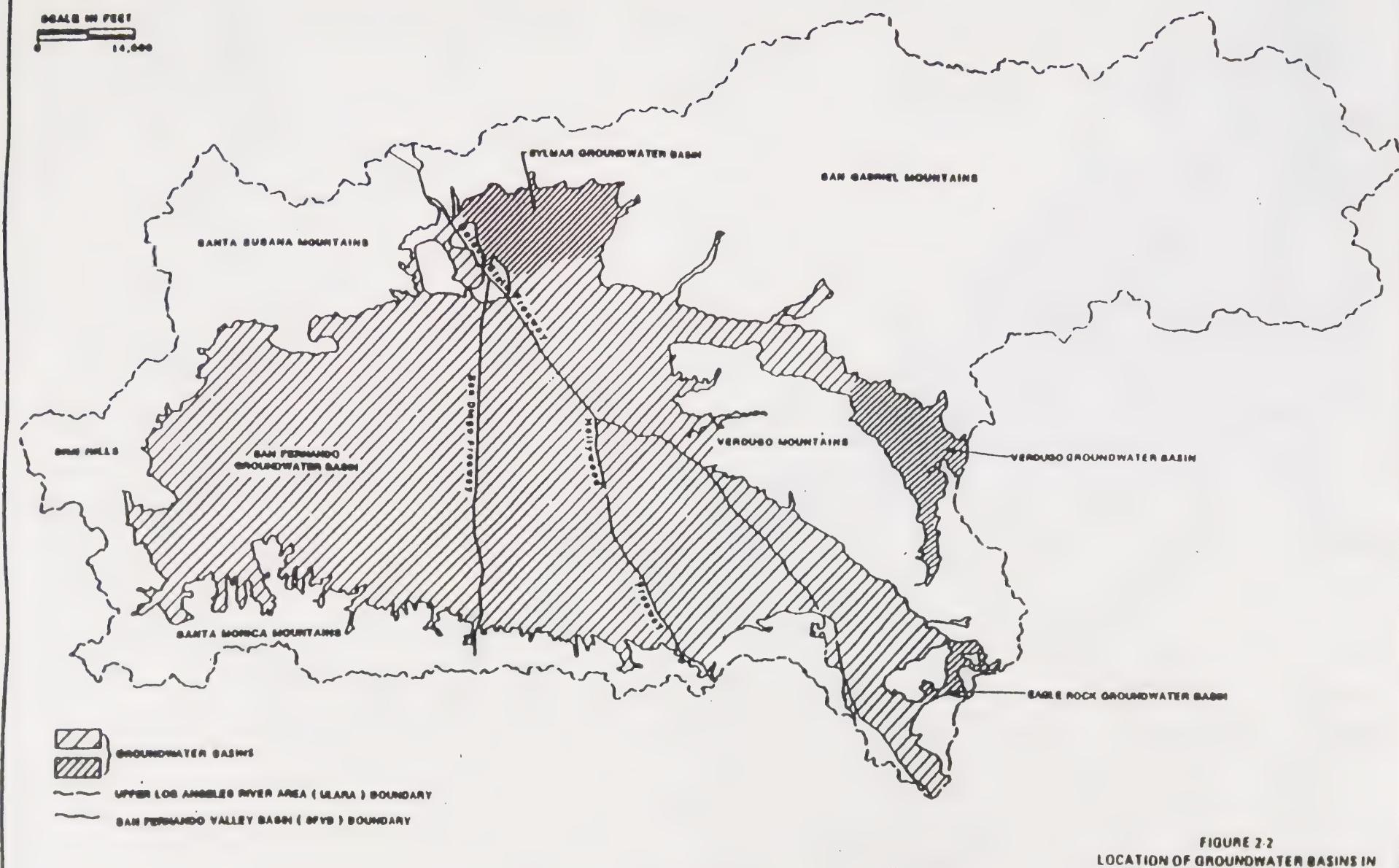


FIGURE 2.2
LOCATION OF GROUNDWATER BASINS IN
UPPER LOS ANGELES RIVER AREA

VERDUGO BASIN



— VERDUGO BASIN BOUNDARY

G-3 ● CITY OF GLENDALE WELL

CV-8 ● C.V.C.W.D. WELL

■ GLENDALE TEST WELL NO. 7 (39718)

GROUNDWATER PUMPING AND RISING WATER OUTFLOW
VERDUGO BASIN

(acre-feet)

Water Year	Safe Yield	Total Extractions	Safe Yield - Extractions	Rising Water Outflow*
1971-1972	7,150	6,666	484	2,050
72-73	7,150	6,260	890	1,706
73-74	7,150	6,397	753	1,772
1974-1975	7,150	5,455	1,695	1,333
75-76	7,150	4,962	2,188	2,170
76-77	7,150	4,173	2,977	1,683
77-78	7,150	3,747	3,403	1,168
78-79	7,150	3,508	3,642	2,470
1979-1980	7,150	3,307	3,843	5,150
80-81	7,150	4,262	2,888	5,780
81-82	7,150	5,608	1,542	3,710
82-83	7,150	5,186	1,964	5,330
83-84	7,150	5,560	1,590	4,000
1984-1985	7,150	5,834	1,316	2,710
85-86	7,150	5,493	1,657	2,470
86-87	7,150	4,874	2,276	2,100
87-88	7,150	4,364	2,786	3,548
88-89	7,150	4,349	2,801	1,995
1989-1990	7,150	4,232	2,918	1,182
90-91	7,150	3,845	3,305	1,157
91-92	7,150	3,264	3,886	1,412
92-93	7,150	3,547	3,603	3,335
1993-1994	7,150	5,036	2,114	1,387
Total	164,450	109,929	54,521	59,618
23-Year Avg.	7,150	4,780	2,370	2,592

* First calculated in 1971-1972 based on LACFCD Gaging Station F-252R, located in the Verdugo Channel. Calculation appears in annual ULARA Watermaster Report.

**Large increase in 79-80 is probably due to a change in the method of measurement.

GROUNDWATER EXTRACTIONS
VERDUGO BASIN

(acre-feet)

Water Year	Extractions		Total Extractions
	CVCVD*	City of Glendale	
1954-1955	2,642	1,435	4,077
55-56	2,265	1,706	3,971
56-57	2,303	1,664	3,967
57-58	2,653	1,931	4,584
58-59	2,899	2,262	5,161
1959-1960	2,988	2,168	5,156
60-61	2,789	2,400	5,189
61-62	2,491	2,018	4,509
62-63	2,914	2,264	5,178
63-64	2,976	2,126	5,102
1964-1965	3,035	2,401	5,436
65-66	3,299	2,202	5,501
66-67	3,270	2,573	5,843
67-68	3,306	2,362	5,668
68-69	3,287	3,430	6,717
1969-1970	3,340	3,576	6,916
70-71	3,027	3,449	6,476
71-72	3,516	3,150	6,666
72-73	3,296	2,964	6,260
73-74	3,612	2,785	6,397
1974-1975	2,952	2,503	5,455
-75-76	2,876	2,086	4,962
76-77	2,201	1,972	4,173
77-78	2,005	1,742	3,747
78-79	1,815	1,693	3,508
1979-1980	1,873	1,434	3,307
80-81	2,140	2,122	4,262
81-82	1,876	3,732	5,608
82-83	1,759	3,427	5,186
83-84	2,009	3,551	5,560
1984-1985	1,997	3,837	5,834
85-86	2,075	3,418	5,493
86-87	2,255	2,619	4,874
87-88	2,268	2,096	4,364
88-89	2,285	2,064	4,349
1989-1990	2,903	1,329	4,232
90-91	2,615	1,230	3,845
91-92	2,631	633	3,264
92-93	2,557	990	3,547
1993-1994	3,634	1,402	5,036
Total (54-55 to 93-94)	106,634	92,746	199,380
Avg (54-55 to 93-94)	2,666	2,319	4,985
Total (68-69 to 93-94)	66,804	63,234	130,038
Avg (68-69 to 93-94)	2,569	2,432	5,001

DEPARTURE FROM SAFE YIELD PUMPING
VERDUGO BASIN

(acre-feet)

Water Year	Safe Yield	Total Extractions*	Departure from Safe Yield		
			Annual	Cumulative (starting 54-55)	Cumulative (beginning 68-69)
1954-1955	7,150	4,077	3,073	1,870	
55-56	7,150	3,971	3,179	5,049	
56-57	7,150	3,967	3,183	8,232	
57-58	7,150	4,584	2,566	10,798	
58-59	7,150	5,161	1,989	12,787	
1959-1960	7,150	5,156	1,994	14,781	
60-61	7,150	5,189	1,961	16,742	
61-62	7,150	4,509	2,641	19,383	
62-63	7,150	5,178	1,972	21,355	
63-64	7,150	5,102	2,048	23,403	
1964-1965	7,150	5,436	1,714	25,117	
65-66	7,150	5,501	1,649	26,766	
66-67	7,150	5,843	1,307	28,073	
67-68	7,150	5,668	1,482	29,555	
68-69	7,150	6,717	433	29,988	433
1969-1970	7,150	6,916	234	30,222	667
70-71	7,150	6,476	674	30,896	1,341
71-72	7,150	6,666	484	31,380	1,825
72-73	7,150	6,260	890	32,270	2,715
73-74	7,150	6,397	753	33,023	3,468
1974-1975	7,150	5,455	1,695	34,718	5,163
75-76	7,150	4,962	2,188	36,906	7,351
76-77	7,150	4,173	2,977	39,883	10,328
77-78	7,150	3,747	3,403	43,286	13,731
78-79	7,150	3,508	3,642	46,928	17,373
1979-1980	7,150	3,307	3,843	50,771	21,216
80-81	7,150	4,262	2,888	53,659	24,104
81-82	7,150	5,608	1,542	55,201	25,646
82-83	7,150	5,186	1,964	57,165	27,610
83-84	7,150	5,560	1,590	58,755	29,200
1984-1985	7,150	5,834	1,316	60,071	30,516
85-86	7,150	5,493	1,657	61,728	32,173
86-87	7,150	4,874	2,276	64,004	34,449
87-88	7,150	4,364	2,786	66,790	37,235
88-89	7,150	4,349	2,801	69,591	40,036
1989-1990	7,150	4,232	2,918	72,509	42,954
90-91	7,150	3,845	3,305	75,814	46,259
91-92	7,150	3,264	3,886	79,700	50,145
92-93	7,150	3,547	3,603	83,303	53,748
1993-1994	7,150	5,036	2,114	85,417	55,862
Total	286,000	199,380	86,620		
40-Year Avg.	7,150	4,985	2,166	2,135	2,149

*CVCWD and City of Glendale extractions.

CUMULATIVE CHANGE IN STORAGE
VERDUGO BASIN

(acre-feet)

Water Year	Change in Storage				Total Groundwater Storage
	Annual	Cumulative 28-29 to 93-94	Cumulative 54-55 to 93-94	Cumulative 68-69 to 93-94	
28-29	(1,370)	(1,370)			94,220
1929-1930	(1,370)	(2,740)			92,850
30-31	(1,430)	(4,170)			91,420
31-32	70	(4,100)			91,490
32-33	(260)	(4,360)			91,230
33-34	1,610	(2,750)			92,840
1934-1935	1,670	(1,080)			94,510
35-36	340	(740)			94,850
36-37	4,020	3,280			98,870
37-38	7,940	11,220			106,810
38-39	2,480	13,700			109,290
1939-1940	(2,120)	11,580			107,170
40-41	5,030	16,610			112,200
41-42	(1,410)	15,200			110,790
42-43	1,390	16,590			112,180
43-44	330	16,920			112,510
1944-1945	(2,670)	14,250			109,840
45-46	(5,680)	8,570			104,160
46-47	(5,260)	3,310			98,900
47-48	(6,680)	(3,370)			92,220
48-49	(8,220)	(11,590)			84,000
1949-1950	(2,250)	(13,840)			81,750
50-51	(340)	(14,180)			81,410
51-52	9,420	(4,760)			90,830
52-53	(1,600)	(6,360)			89,230
53-54	(3,150)	(9,510)			86,080
1954-1955	580	(8,930)	580		86,660
55-56	2,340	(6,590)	2,920		89,000
56-57	3,930	(2,660)	6,850		92,930
57-58	4,560	1,900	11,410		97,490
58-59	(530)	1,370	10,880		96,960
1959-1960	2,260	3,630	13,140		99,220
60-61	(4,120)	(490)	9,020		95,100
61-62	4,720	4,230	13,740		99,820
62-63	1,890	6,120	15,630		101,710
63-64	(780)	5,340	14,850		100,930
1964-1965	(340)	5,000	14,510		100,590
65-66	8,310	13,310	22,820		108,900

CUMULATIVE CHANGE IN STORAGE

VERDUGO BASIN

(acre-feet)

Water Year	Change in Storage				Total Groundwater Storage
	Annual	Cumulative 28-29 to 93-94	Cumulative 54-55 to 93-94	Cumulative 68-69 to 93-94	
66-67	3,240	16,550	26,060		112,140
67-68	(2,490)	14,060	23,570		109,650
68-69	2,130	16,190	25,700	2,130	111,780
1969-1970	100	16,290	25,800	2,230	111,880
70-71	(630)	15,660	25,170	1,600	111,250
71-72	(7,050)	8,610	18,120	(5,450)	104,200
72-73	740	9,350	18,860	(4,710)	104,940
73-74	(380)	8,970	18,480	(5,090)	104,560
1974-1975	30	9,000	18,510	(5,060)	104,590
75-76	(1,300)	7,700	17,210	(6,360)	103,290
76-77	320	8,020	17,530	(6,040)	103,610
77-78	5,190	13,210	22,720	(850)	108,800
78-79	3,600	16,810	26,320	2,750	112,400
1979-1980	1,740	18,550	28,060	4,490	114,140
80-81	(2,870)	15,680	25,190	1,620	111,270
81-82	(2,660)	13,020	22,530	(1,040)	108,610
82-83	2,990	16,010	25,520	1,950	111,600
83-84	(2,810)	13,200	22,710	(860)	108,790
1984-1985	(3,220)	9,980	19,490	(4,080)	105,570
85-86	130	10,110	19,620	(3,950)	105,700
86-87	(3,024)	7,086	16,596	(6,974)	102,676
87-88	(931)	6,155	15,665	(7,905)	101,745
88-89	(2,532)	3,623	13,133	(10,437)	99,213
1989-1990	(1,852)	1,771	11,281	(12,289)	97,361
90-91	(5,945)	(4,174)	5,336	(18,234)	91,416
91-92	285	(3,889)	5,621	(17,949)	91,701
92-93	12,601	8,712	18,222	(5,348)	104,302
1993-1994	3,575	12,287	21,797	(1,773)	107,877

Averages of Cumulative Change in Groundwater Storage:

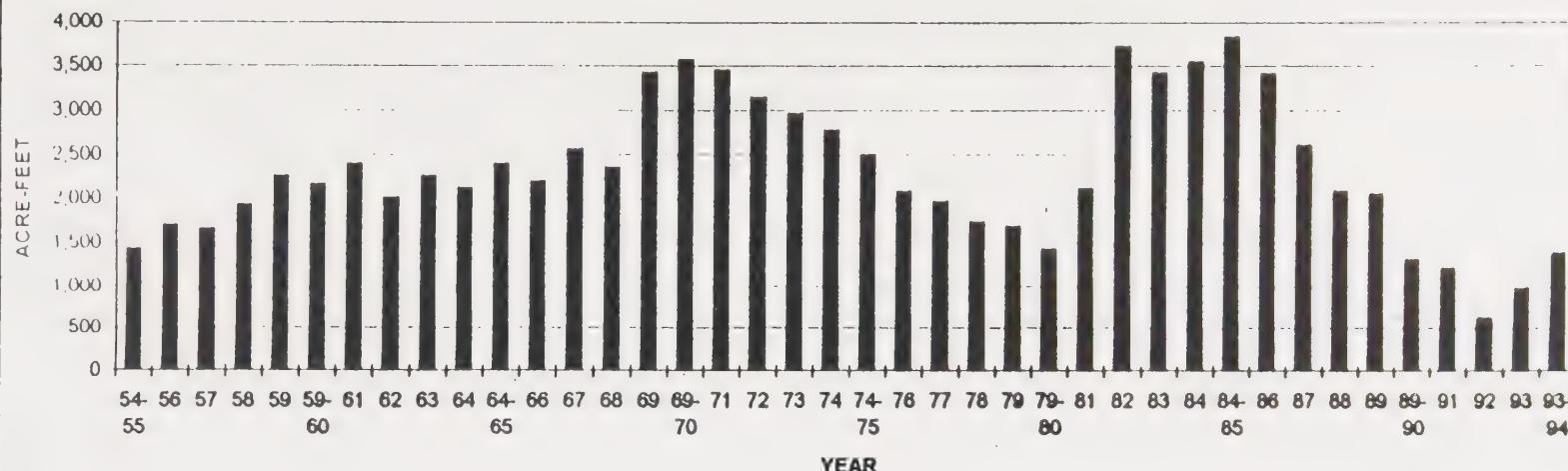
Period 1928-29 to 1967-68: 352

Period 1928-29 to 1993-94: 186

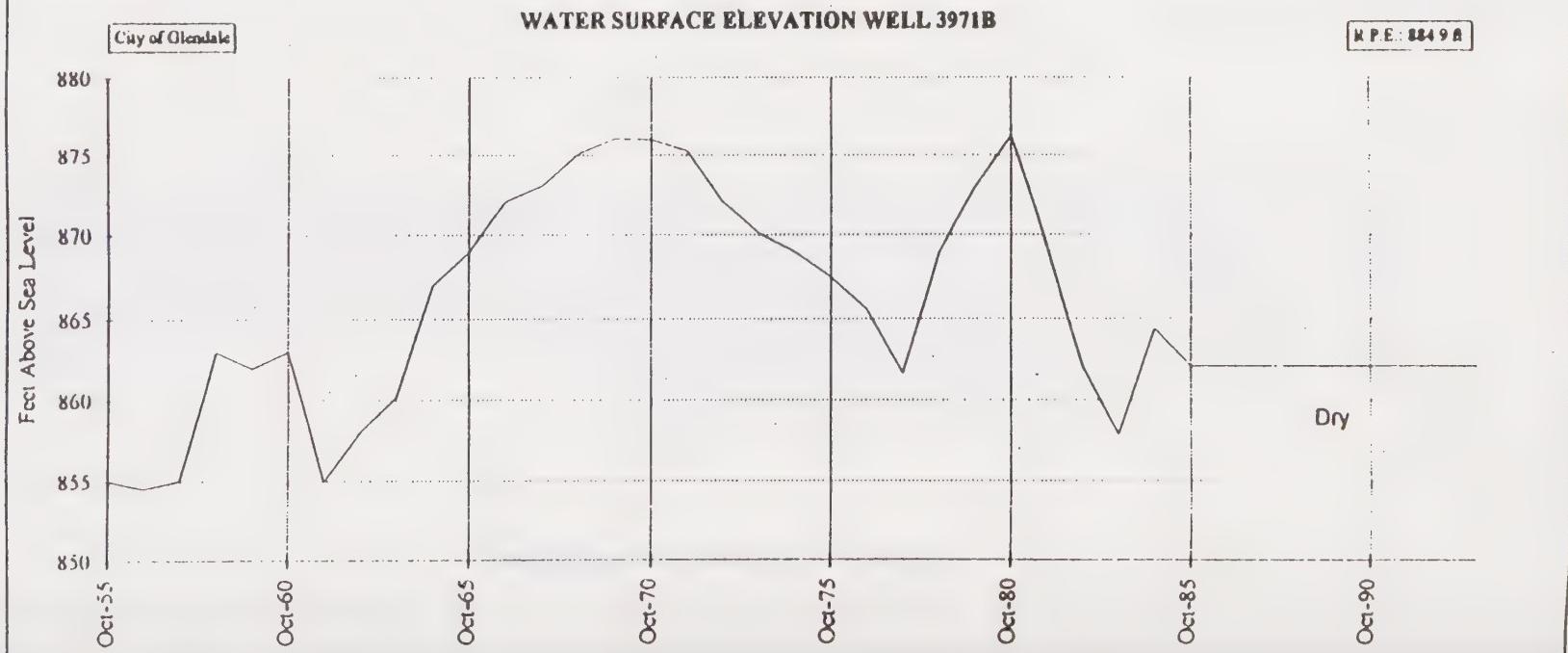
Period 1954-55 to 1993-94: 545

Period 1968-69 to 1993-94: (68)

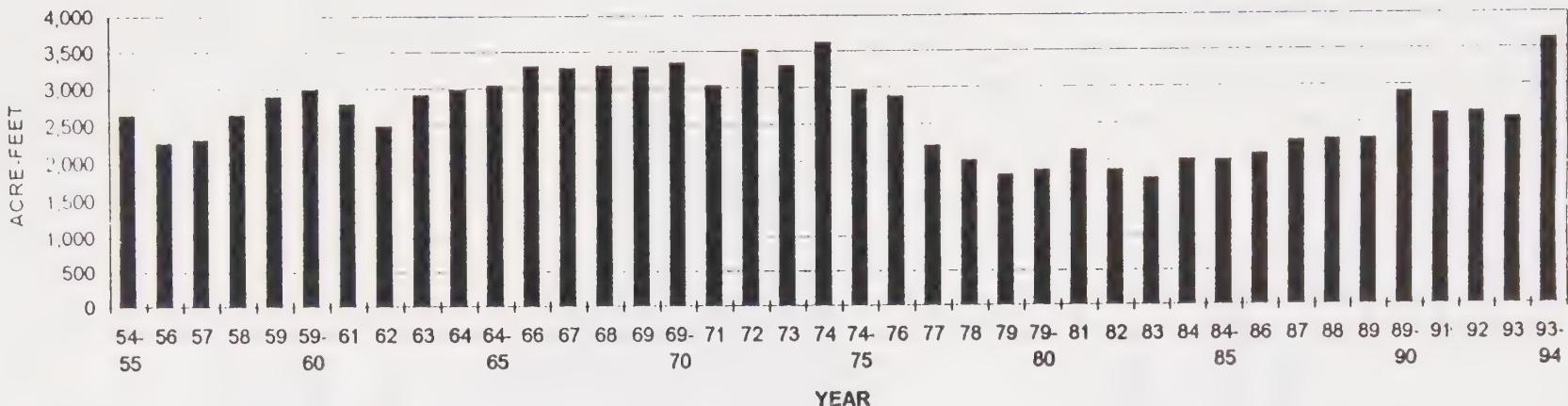
VERDUGO BASIN - CITY OF GLENDALE PUMPING



WATER SURFACE ELEVATION WELL 3971B

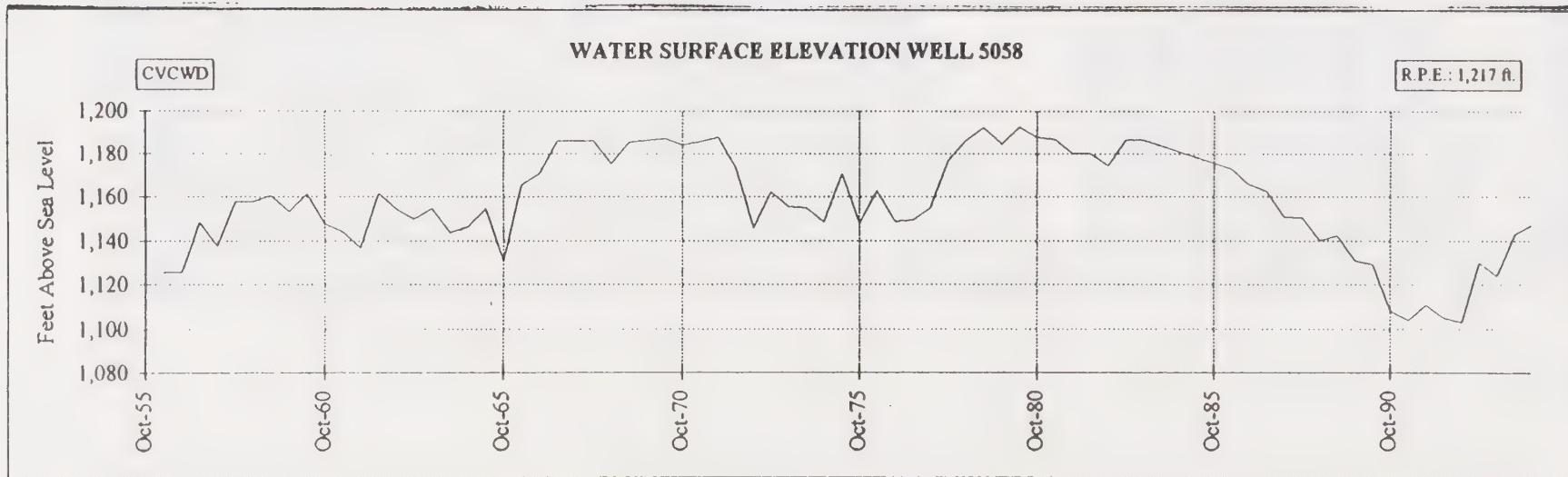


VERDUGO BASIN-CVCWD PUMPING

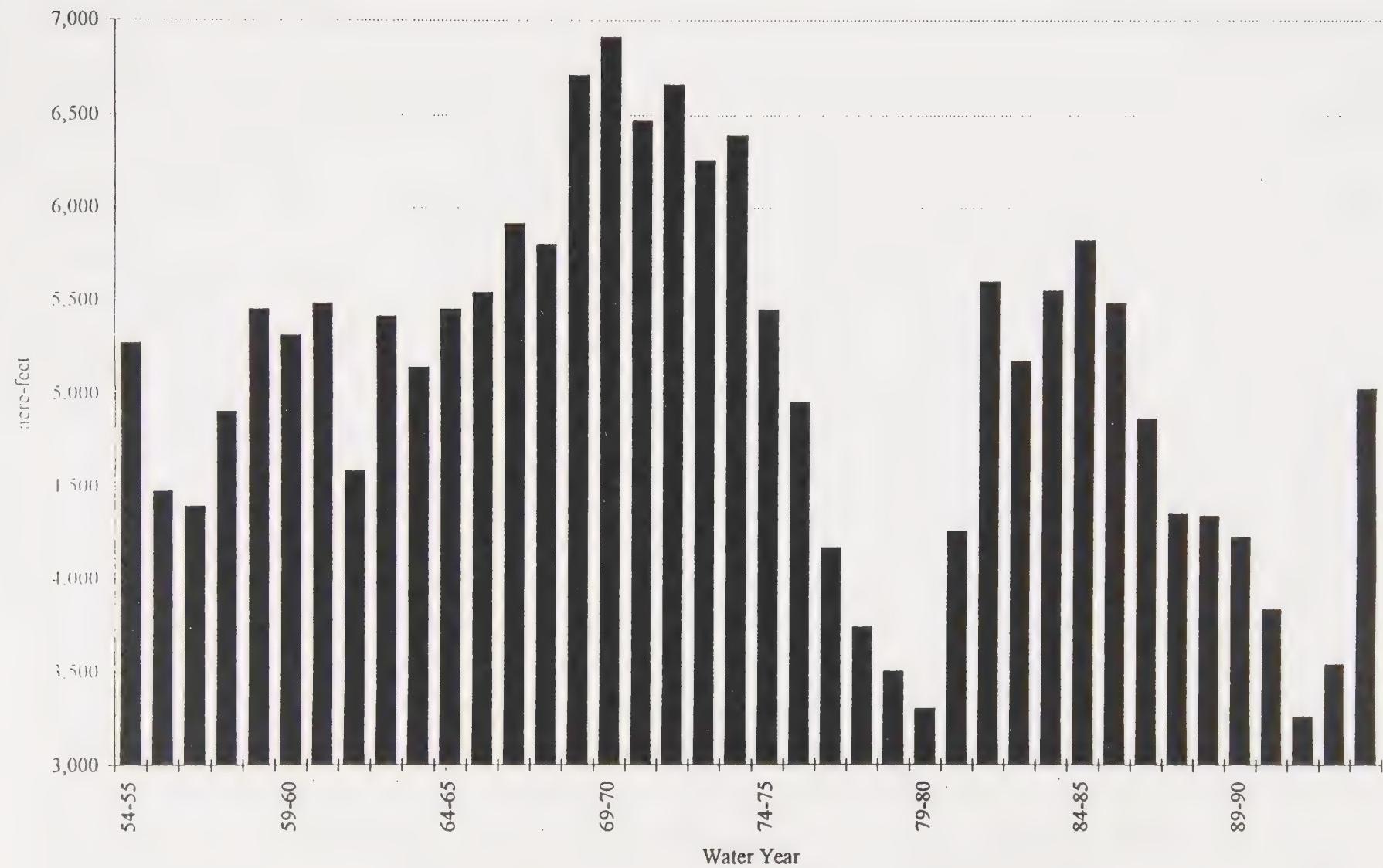


G-58

WATER SURFACE ELEVATION WELL 5058

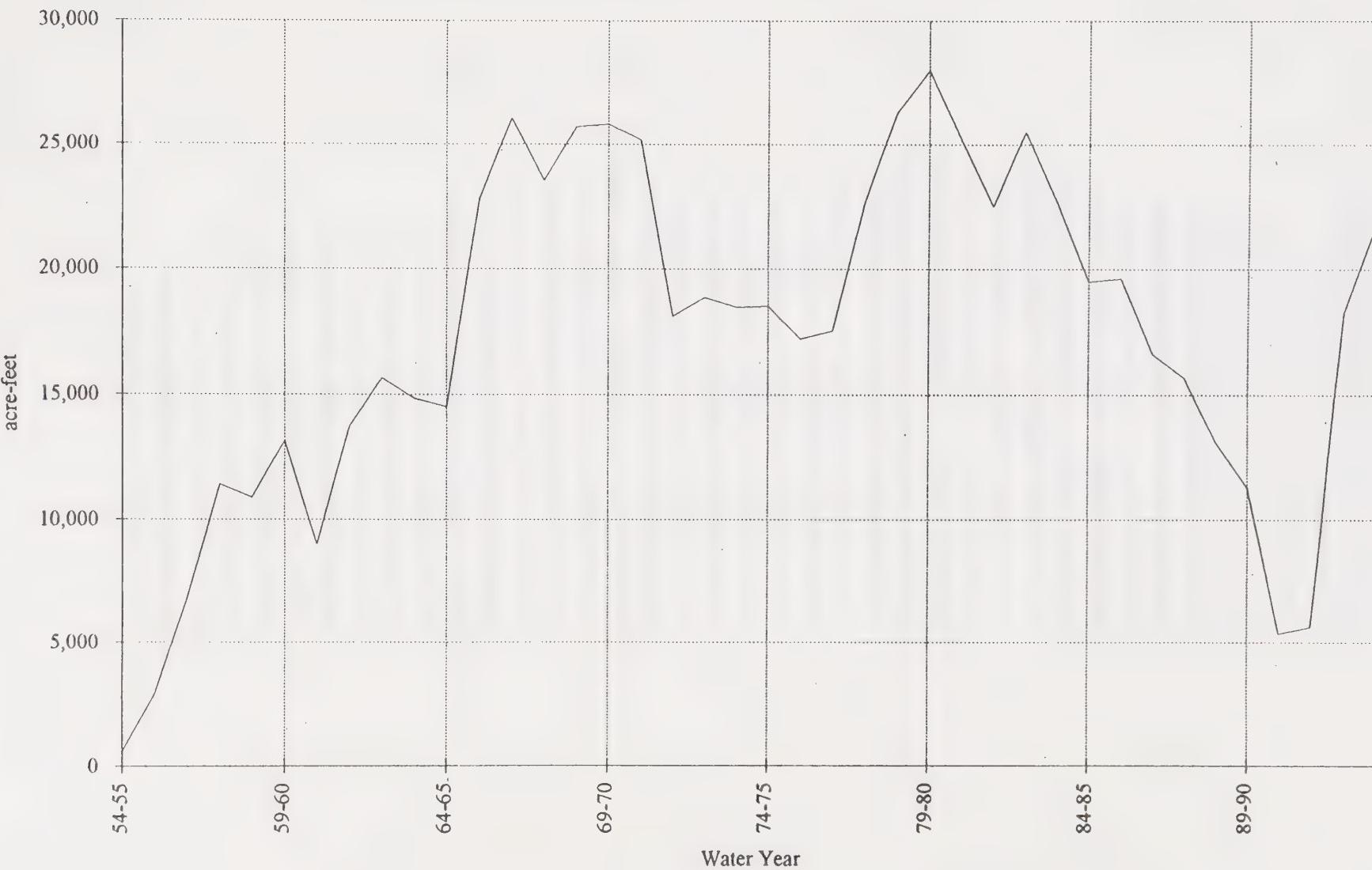


TOTAL VERDUGO BASIN PUMPING

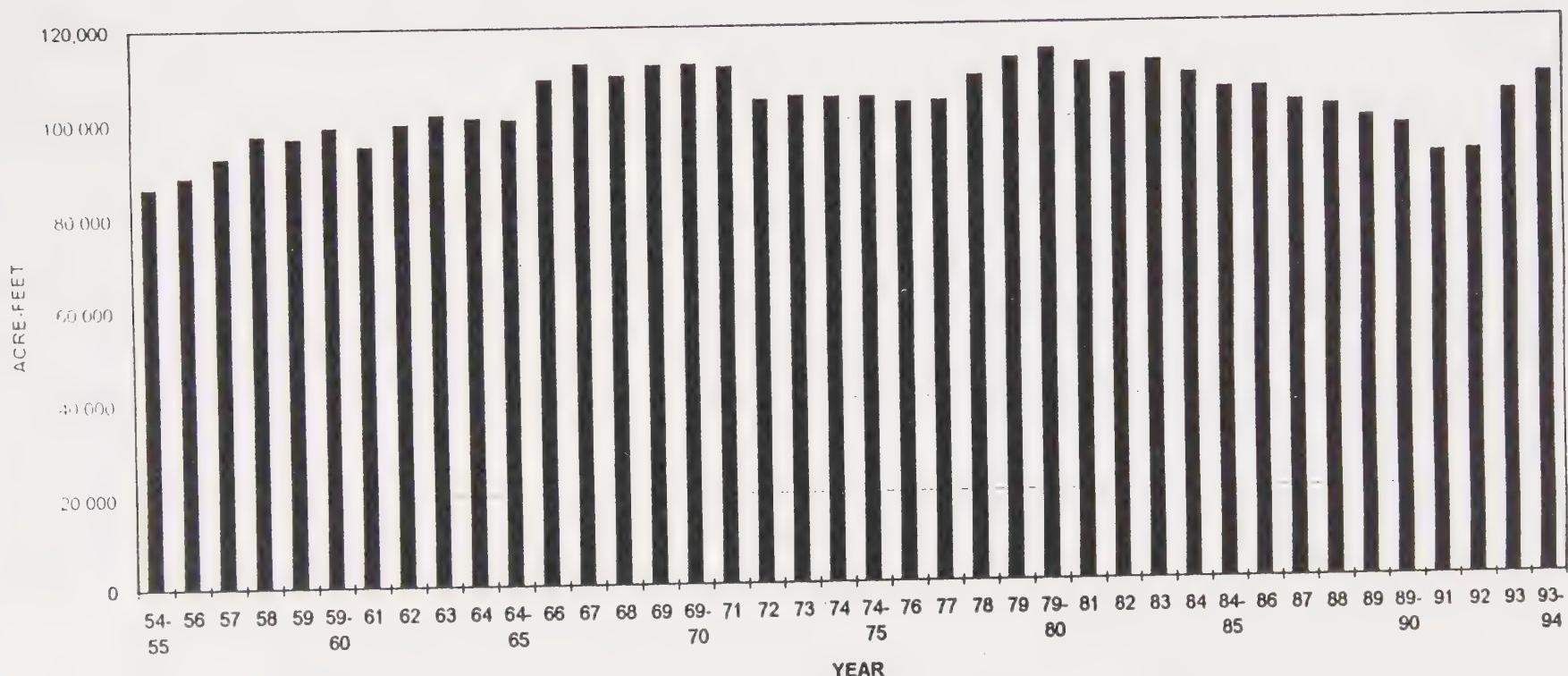


CUMULATIVE CHANGE IN STORAGE - VERDUGO BASIN (1955-1994)

0 9-
G



TOTAL GROUNDWATER STORAGE IN VERDUGO BASIN



SAFE YIELD FACT SHEET

EAGLE ROCK

EAGLE ROCK BASIN
BACKGROUND DATA ON HYDROLOGY AND WATER RIGHTS

I. **DESCRIPTION OF GROUNDWATER BASIN**

- A. Total Watershed Area – (3,717 acres or 5.8 sq. mi.) – Plates 1 and 2
- B. Basin Area – (807 acres or 1.3 sq. mi.) – Plates 2 and 3 – Forebay Area (Free Water Table) is 536 Acres – Fig. 1
- C. Tributary Hill and Mountains – (2,910 acres or 4.5 sq. mi.) – Plate 2
- D. Maximum Depth of Water-bearing Materials – (up to 125 ft.) – Fig. 2
- E. Volume of Stored Groundwater – (5,850 AF; as of Oct. 1958) – Original Work by SWRB.
- F. Amount of Groundwater Underflow from ER Basin to SF Basin – 50 AF/yr. – (See Fig. 2)

II. **SURFACE HYDROLOGY**

- A. Average Precipitation on Valley Fill Area – (85 yr. avg. = 1,140 AF/yr. or 17.0 in./yr.)
- B. Average Precipitation on Hill and Mountain Areas – (85-yr. avg. = 4,360 AF/yr. or 18.0 in./yr.).
- C. Hill and Mountain Runoff – Included with SF Basin 29-yr. avg. = 34,400 AF/yr.).
- D. Recharge from Precipitation and Runoff – (Zero AF/yr.) – ULARA Judgment – 1979.

III. **AVERAGE RECHARGE TO BASIN**

- A. Total Recharge (Safe Yield) – (up to 500 AF/yr.) – ULARA Judgment – 1979 – Recharge from delivered water only – (4,000 AF/yr.) (0.208) (536 AC. ÷ 807 AC.) is 552 AF/yr.
- B. Sources of Recharge
 - 1. Native Safe Yield – from Precipitation on Valley Area and Runoff – (Zero AF/yr.) – ULARA Judgment – 1979.

2. Recharge (Return Flow) of Delivered Imported Water – (up to 500 AF/yr.) – ULARA Judgment – 1979.

IV. HISTORIC GROUNDWATER PUMPING

A. Sparkletts

1. Period 1978-79 to 1990-91 – (2,202 AF or 169 AF/yr.)
2. Period 1993-94 to 1995-96 – (595 AF or 200 AF/yr.)

B. Deep Rock

1. Period 1928-29 to 1956-57 – (145 AF or 5 AF/yr.)
2. Period 1978-79 to 1990-91 – (Zero AF or Zero AF/yr.)
3. Period 1993-94 to 1995-96 – (Zero AF or Zero AF/yr.)

V. HISTORIC DELIVERED WATER

A. Los Angeles Delivered Water (1978-79 to 1991)

1. MWD Water – (13- yr. avg. – 3,262 AF/yr.)
2. Owens Water – (13- yr. avg. – 794 AF/yr.)
3. Total – (4,056 AF/yr. – 13 yr. avg.) – (See Table 1.)

B. Los Angeles Delivered Water (1993-94 to 1995-96)

1. MWD Water – (3-yr. avg. – 3,966 AF/yr.)
2. Owens Water – (3 yr. avg. – Zero AF/yr.)
3. Total – (3,966 AF/yr. – 3 yr. avg.)

VI. CHANGE IN GROUNDWATER STORAGE

- A. Cumulative Change in Storage – (Minus 108 AF) – (1928-29 to 1959-60 Period)
- B. Estimated Annual Change in Storage – (Period 1940-57; 17-yr. avg. is Minus 6.4 AF).
- C. Estimated Annual Change in Storage – (Period 29-yr. avg.) – 1928-57 is Minus 3.7 AF) – (See Table 2.)

VII. WATER QUALITY – (See Table 3)

- A. Forebay above Raymond Fault (3987G)
 - 1. TDS – 822 PPM
 - 2. NO₃ – 0.4 PPM
 - 3. Cl – 94 PPM
- B. Deep Rock Artesian Well (3987D)
 - 1. TDS – 380 PPM
 - 2. NO₃ – 27 PPM
 - 3. Cl – 45 PPM
- C. Upper Aquifer – Below Raymond Fault (3977B)
 - 1. TDS – 1236 PPM
 - 2. NO₃ – 0 PPM
 - 3. Cl – 124 PPM

718a – Eagle Rock Basin

Table 1

EAGLE ROCK BASIN

Historic Groundwater Pumping and Delivered Water
Values - AF/yr.

Delivered Water

Water Years	Owens Water	MWD Water	Total	Hill & Mountain Delivered Water	Sparkletts Historic Pumping*
78-79	2,499	1,187	3,686	1,981	160
1979-80	1,600	2,060	3,660	1,982	173
80-81	1,272	2,823	4,095	2,213	173
81-82	2,421	1,312	3,733	2,023	175
82-83	428	3,309	3,737	1,968	169
83-84	430	3,275	3,705	2,355	159
1984-85	153	4,819	4,972	2,884	70
85-86	346	4,222	4,568	2,829	172
86-87	1,176	3,255	4,431	3,041	171
87-88	0	4,454	4,454	2,465	173
88-89	0	4,297	4,297	2,323	169
1989-90	0	4,000	4,000	2,000	169
90-91	0	3,386	3,386	1,771	169
Total	10,325	42,399	52,724	29,835	2102
13-Yr. Average	794	3,261	4,056	2,295	162
1993-94	0	3,762	3,762	*	189
1994-95	0	3,869	3,869	*	198
1995-96	0	4,268	4,268	*	208
Total	0	11,899	11,899	*	595
3-Yr. Average	0	3,966	3,966	2,200	198

* Not determined anymore

**Deep Rock Pumping was zero for the Period 1978-79 thru 1995-96.

Table 2

TABLE B-1-S

CHANGE IN GROUND WATER STORAGE IN THE VALLEY
FILL FOR PERIOD 1928-29 THROUGH 1959-60

EAGLE ROCK SUBAREA

Year	: Pressure Surface : : Elevation for : : Well 3986B : : in feet	: Change : : In Feet :	: Estimated Annual : : Change : : in Storage, : : Acre-Feet :	: Cumulative : : Change : : in Storage, : : Acre-Feet
1928-29	519	-1	- 54	- 54
29-30	518	-1	- 54	-108
1930-31	517	-1	- 54	-162
31-32	520	+3	+162	0
32-33	519	-1	- 54	- 54
33-34	518	-1	- 54	-108
34-35	518	0	0	-108
1935-36	518*	0	0	-108
36-37	519*	+1	+ 54	- 54
37-38	522*	+3	+162	+108
38-39	521*	-1	- 54	+ 54
39-40	520*	-1	- 54	0
1940-41	522*	+2	+108	+108
41-42	521*	-1	- 54	+ 54
42-43	520	-1	- 54	0
43-44	521	+1	+ 54	+ 54
44-45	521	0	0	+ 54
1945-46	519	-2	-108	- 54
46-47	520	+1	+ 54	0
47-48	519*	-1	- 54	- 54
48-49	516*	-3	-162	-216
49-50	516*	0	0	-216
1950-51	516*	0	0	-216
51-52	518	+2	+108	-108
52-53	517	-1	- 54	-162
53-54	519	+2	+108	- 54
54-55	518	-1	- 54	-108
1955-56	517	-1	- 54	-162
56-57	518	+1	+ 54	-108
57-58	519	+1	+ 54	- 54
58-59	517	-2	-108	-162
59-60	518	+1	+ 54	-108
17-Year Average			-6.1	
1940-57			-6.1	
29-Year Average			-3.7	
1928-57			-3.7	

*Elevation of water table adjusted or taken from measurements to reflect nonpumping conditions (See pages B-4 and B-5)

MINERAL ANALYSES OF GROUND WATER-EAGLE ROCK SUBAREA

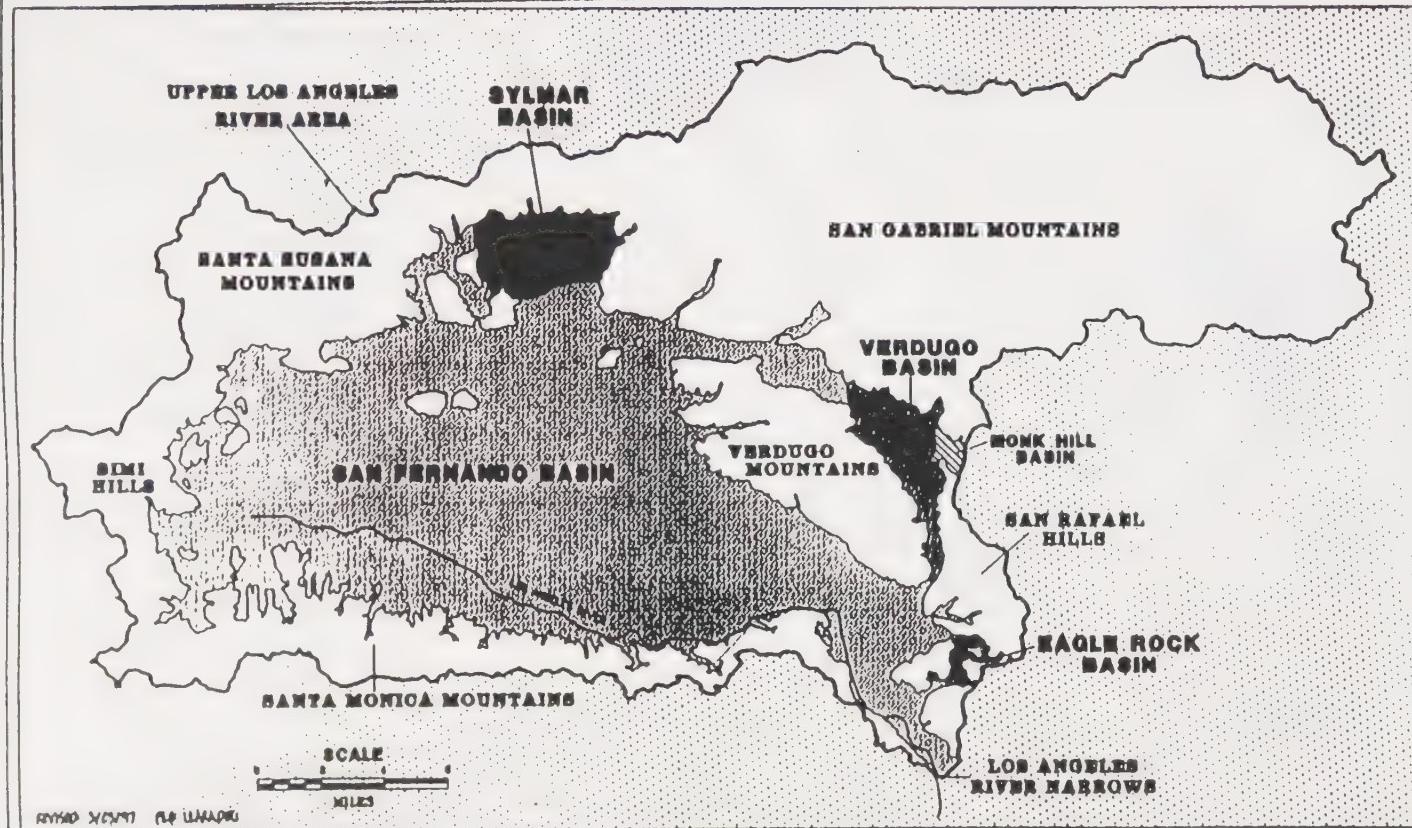
Well Number	Sampled	Date	at	pH	Mineral Constituents in						Parts per Million				(c)					
					Ca	Mg	Na	K	CO ₃	HCO ₃	SO ₄	Cl	NO ₃	F	B	ABS	Total Equivalents per Million	Dis- Source	Solved of	Solids: Analysis
3977B ^a	9-17-63	1825	7.3	25°C	194 9.72	79 6.51	102 4.43	1.1 0.03	0	721 11.81	266 5.55	124 3.50	0	0.8 0.04	0.18 0.5	1236	SWRB			
3986F ^a	9-19-63	1289	7.8		122 6.09	79 6.51	44 1.90	1.6 0.04	0	312 5.12	257 5.36	110 3.10	42 0.68	0.7 0.04	0.05 0.0	937	SWRB			
3-3 -64	1120	8.1			134 6.68	67 5.49	46 2.00	1.2 0.03	0	329 5.40	264 5.51	106 3.00	31 0.50	0.2 0.01	0.09 0.0	980	SWRB			
3987C ^a	9-17-63	1220	7.2		86 4.29	56 4.64	80 3.47	2.5 0.06	0	341 5.59	192 3.99	94 2.66	0	0.4 0.02	0.10 1.3	822	SWRB			
3987D ^b	8-4-64	638	7.3		48 2.40	24 1.97	52 2.26	0.1 0.03	0	240 3.94	53 1.10	45 1.27	27 0.44	0.9 0.05	0.08 0.0	380	SWRB			

^a Test hole drilled by Referee in 1963.^b Deep Rock Artesian Water Company well.

c TDS values relate to the permeability of the formation and Colorado River Water

T-968

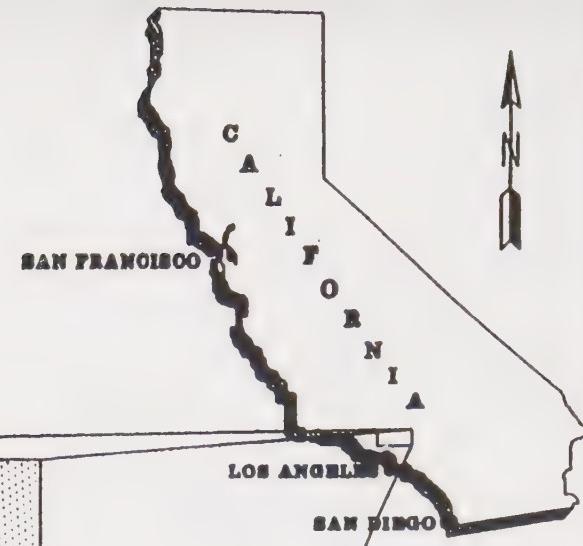
G-69

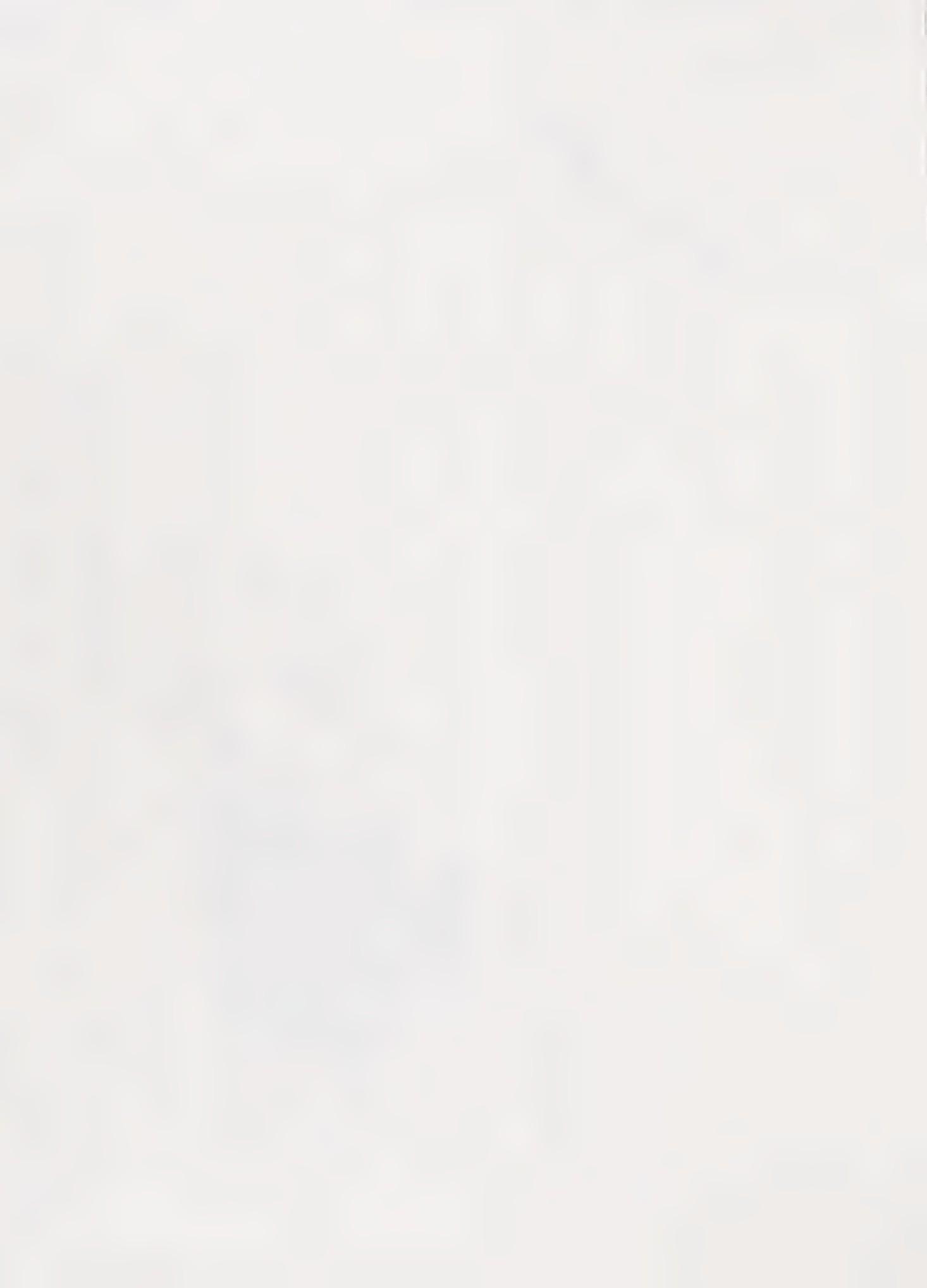


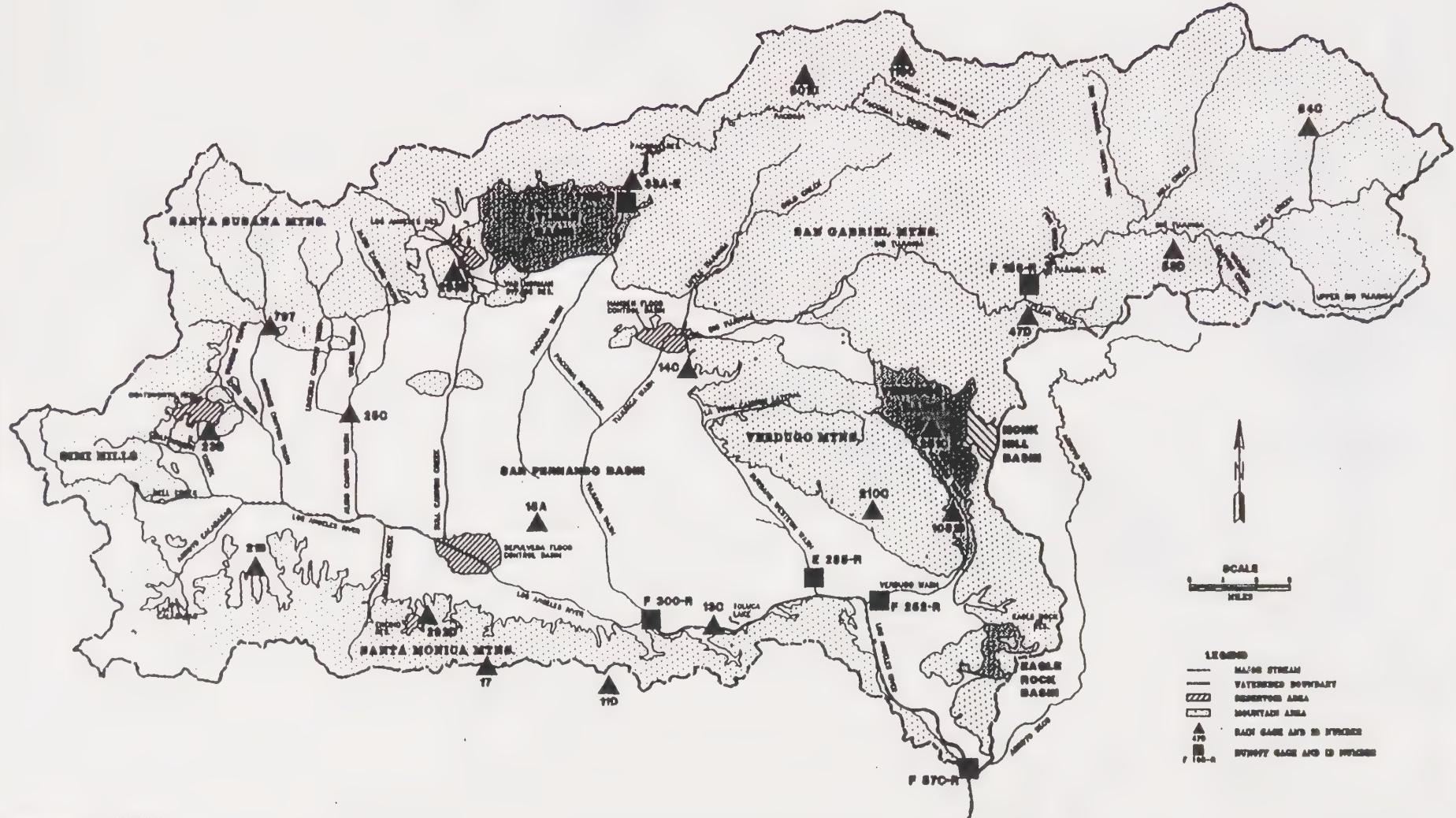
1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area: Vicinity and Location Map

PLATE
1





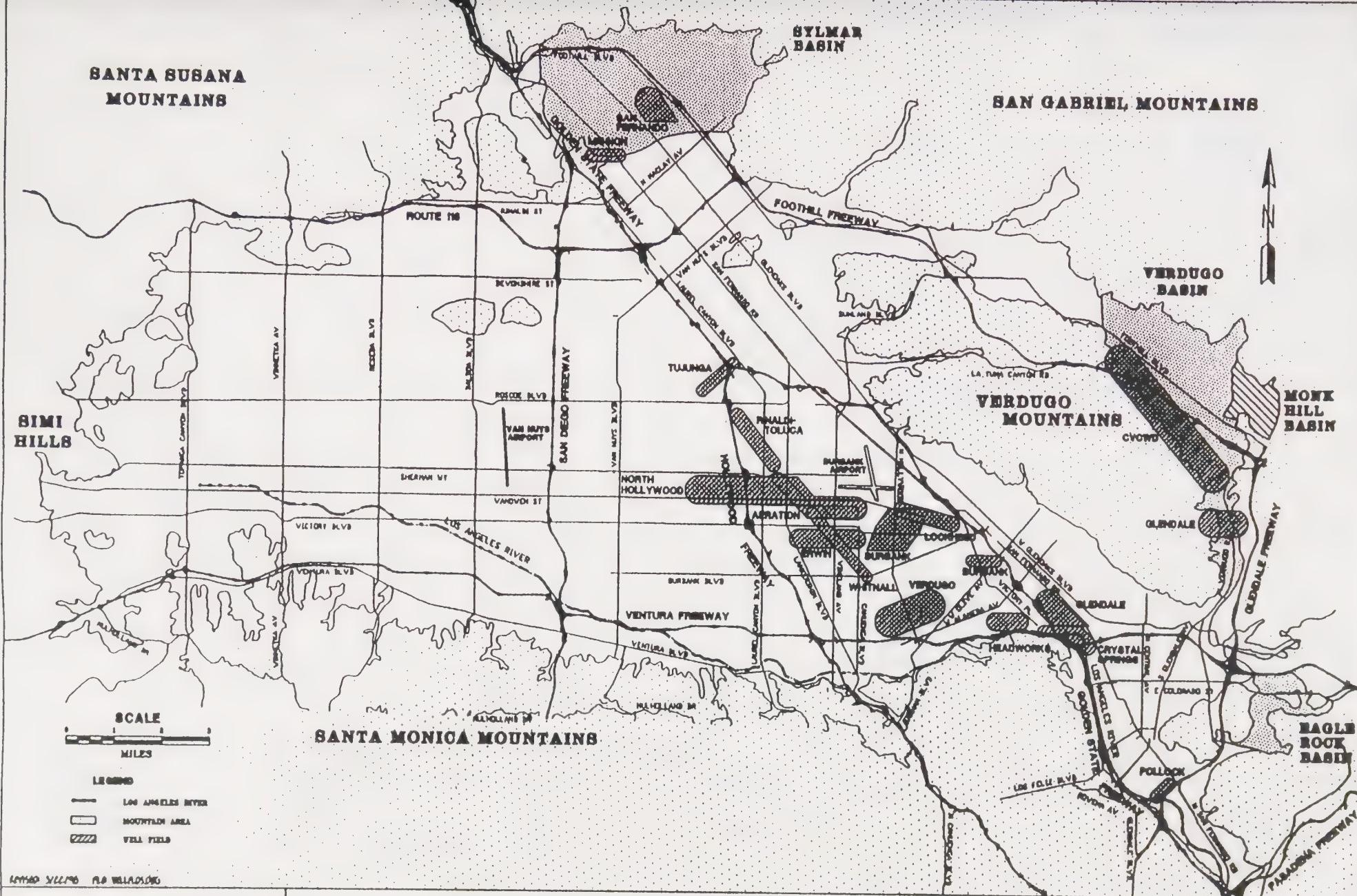


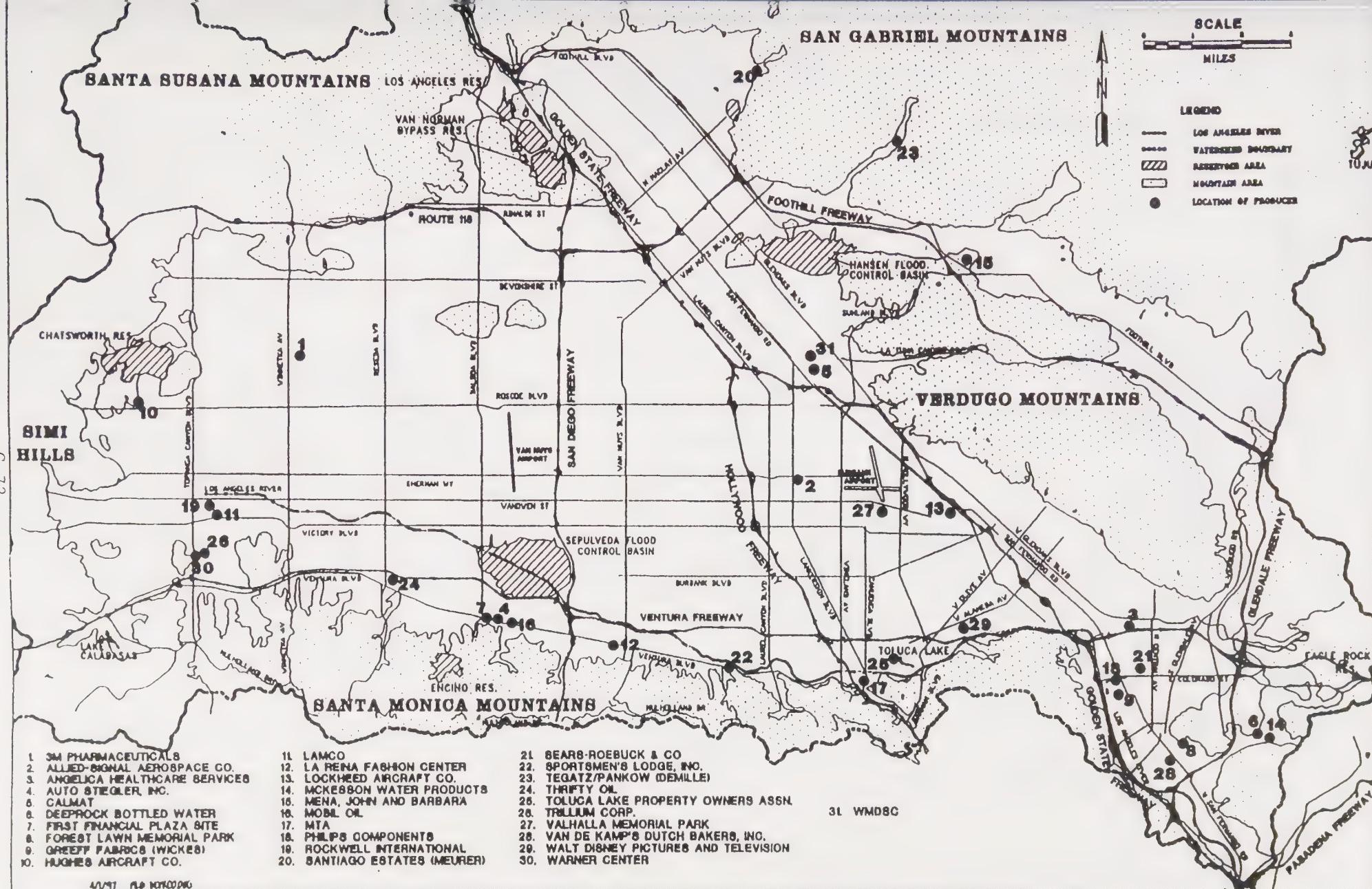
NATIONAL SURVEY PLATE NUMBER

1995-96 Water Year
ULARA Watermaster
Report

Upper Los Angeles River Area: Locations of Rain and Runoff Measuring Stations

PLATE 2



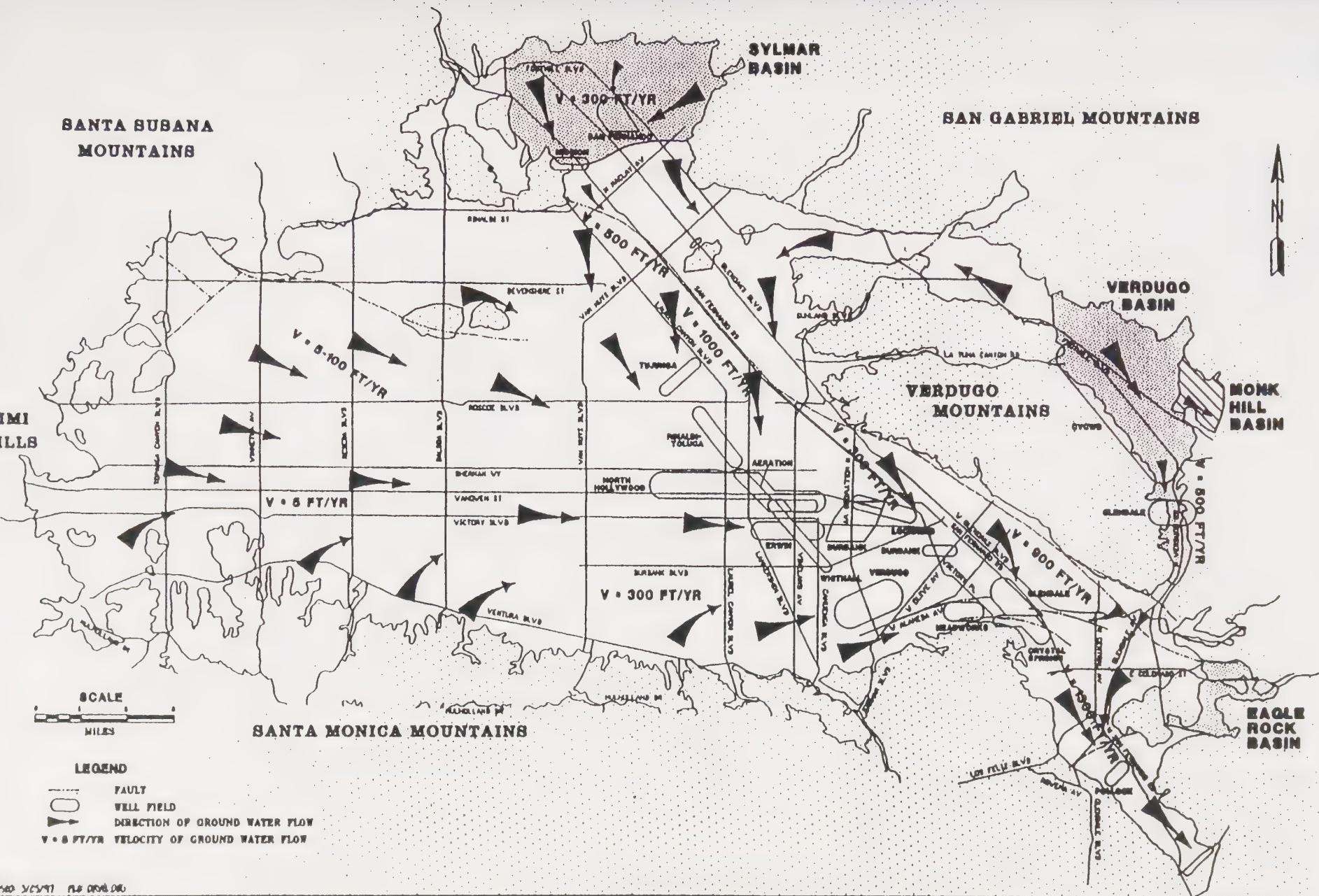


Upper Los Angeles River Area: Locations of Individual Producers

**1995-96 Water Year
ULARA Watermaster
Report**

PLATE

G-73



LAWRENCE BERKELEY NATIONAL LABORATORY

1995-96 Water Year
ULARA Watermaster
Report

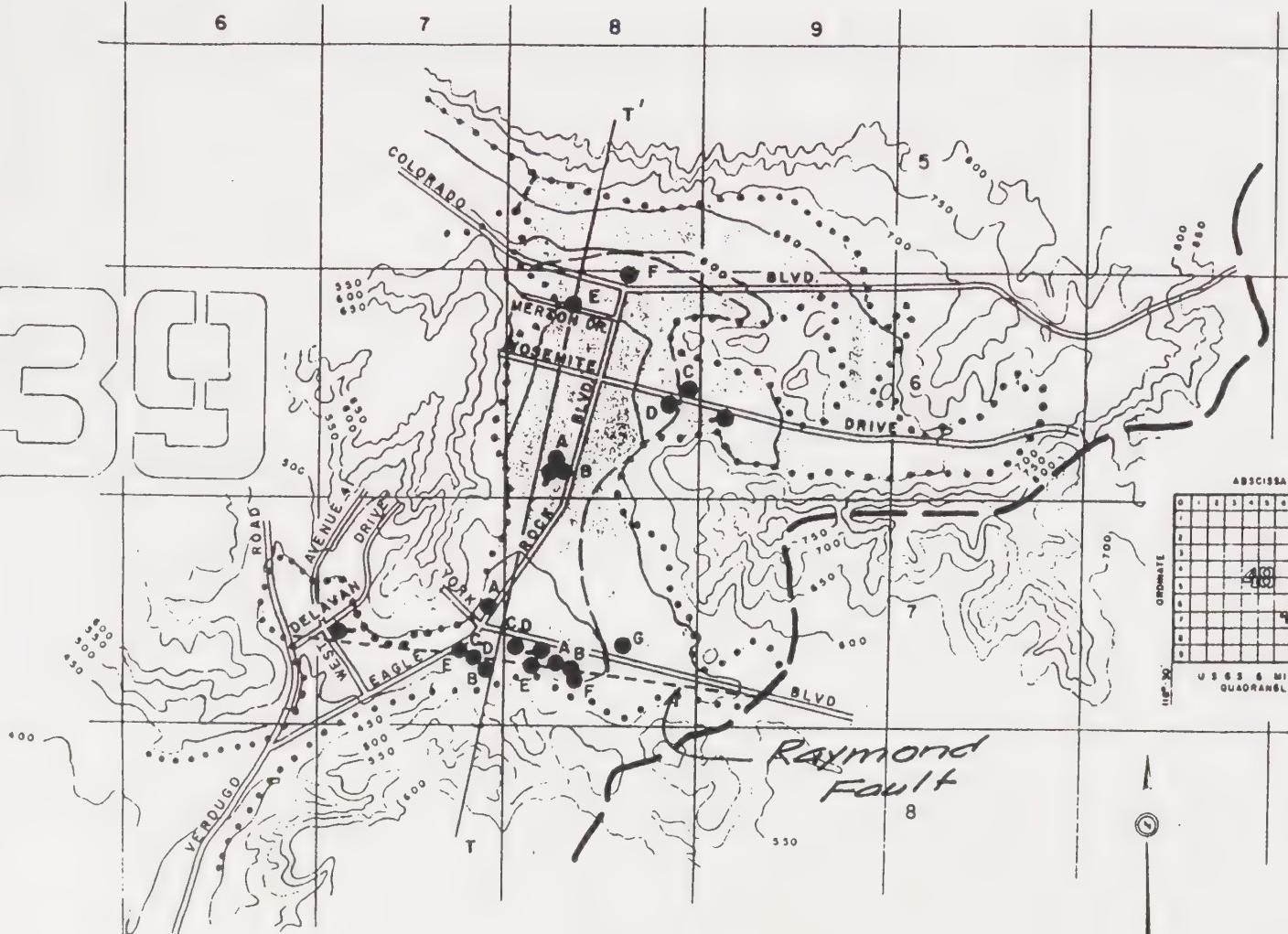
Upper Los Angeles River Area:
Estimated Directions and Velocities of Groundwater Flow

LEGEND

- A B LOCATION OF WELL
- WATERSHED BOUNDARY
- BOUNDARY OF CLAY CAP
- BOUNDARY OF HYDROLOGIC SUBAREA
- T—T' LOCATION OF GEOLOGIC CROSS SECTION (See Plate 2S)
- BOUNDARY OF VALLEY FILL
- LINE OF EQUAL ELEVATION OF GROUND SURFACE
- 400 EAGLE ROCK SUBAREA

REFERENCE: CONTOURS BASED ON U.S.G.S. QUADRANGLE
DATUM IS MEAN SEA LEVEL
CONTOUR INTERVALS 50 FEET

39

GUIDE TO WELL NUMBERING SYSTEM

EXAMPLE WELL NO. 4867

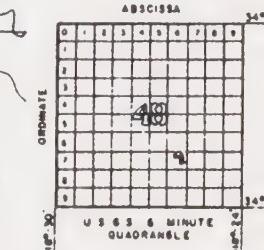


PLATE 23

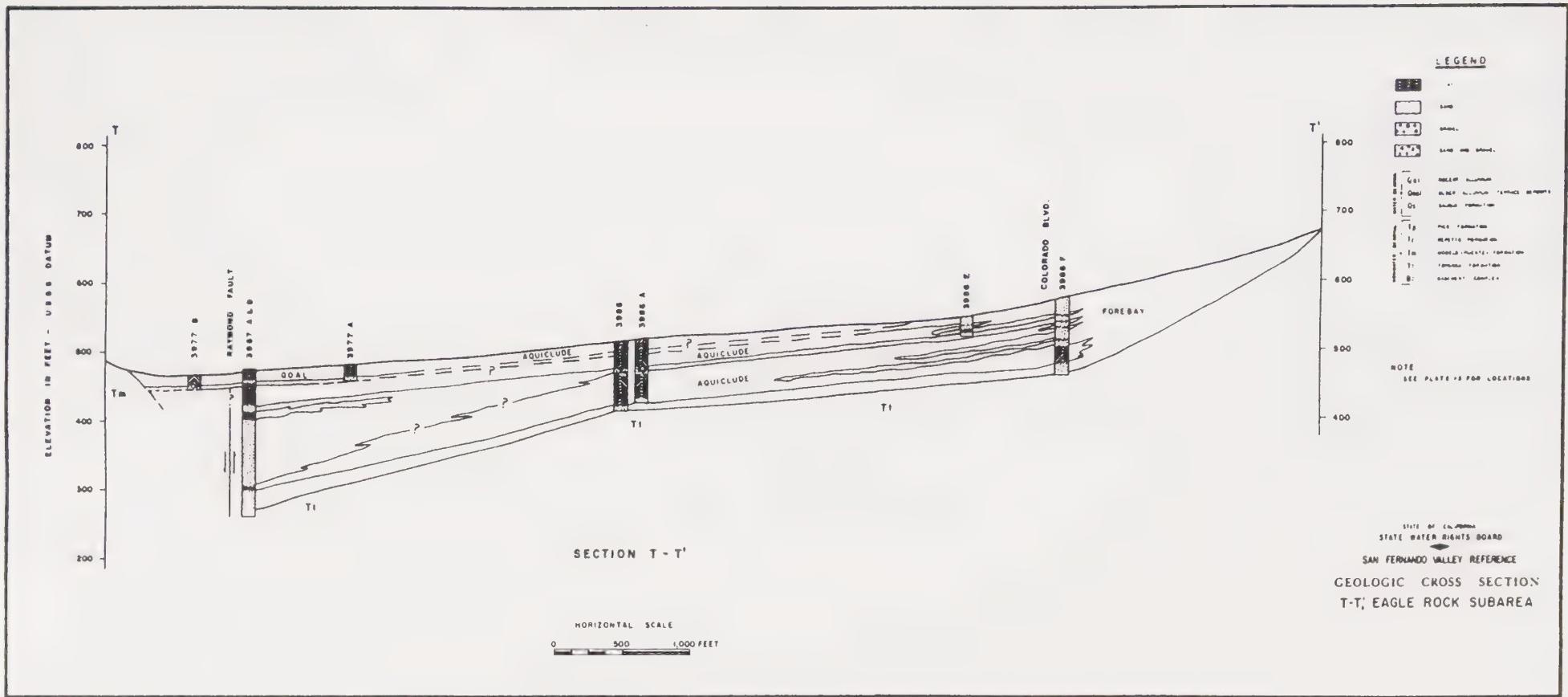


Figure 2

LEGEND
(U.S.G.S. DATUM)
WATER LEVELS
— COMPLETE RECORD
- - - PARTIAL RECORD
- - - NO RECORD

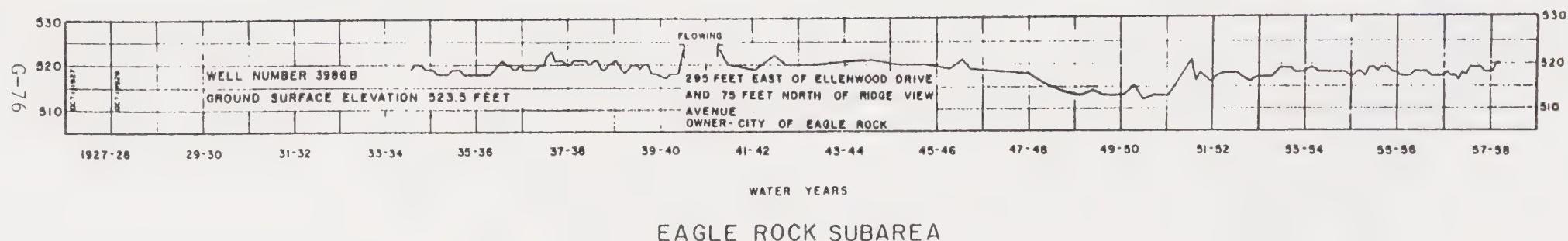
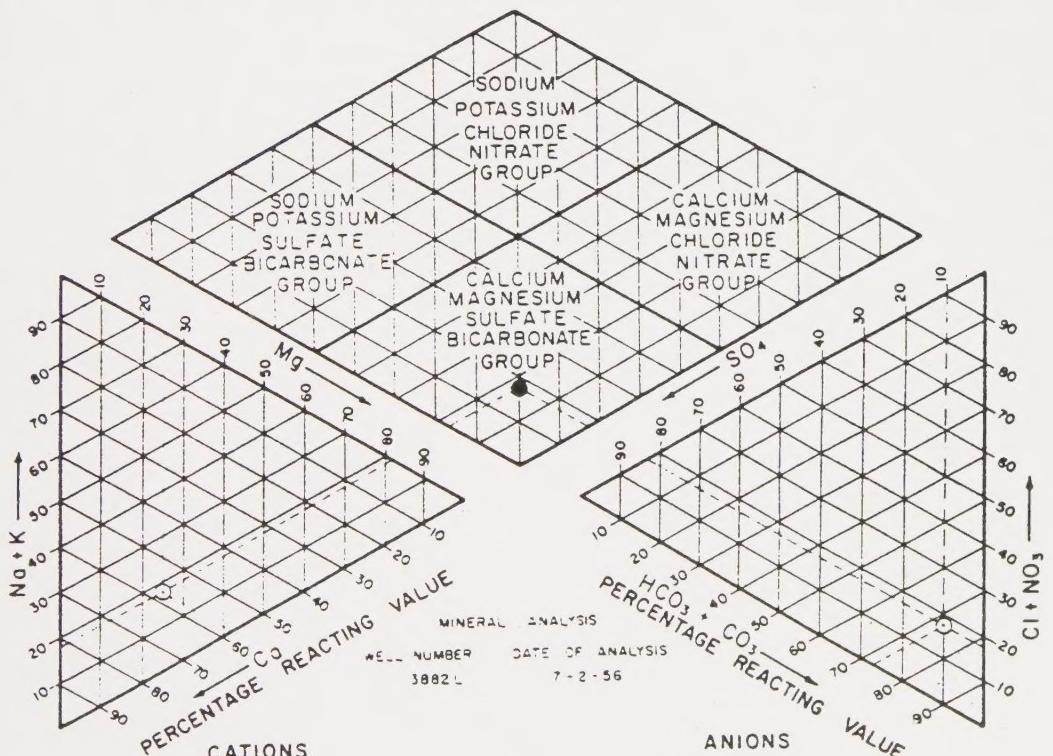
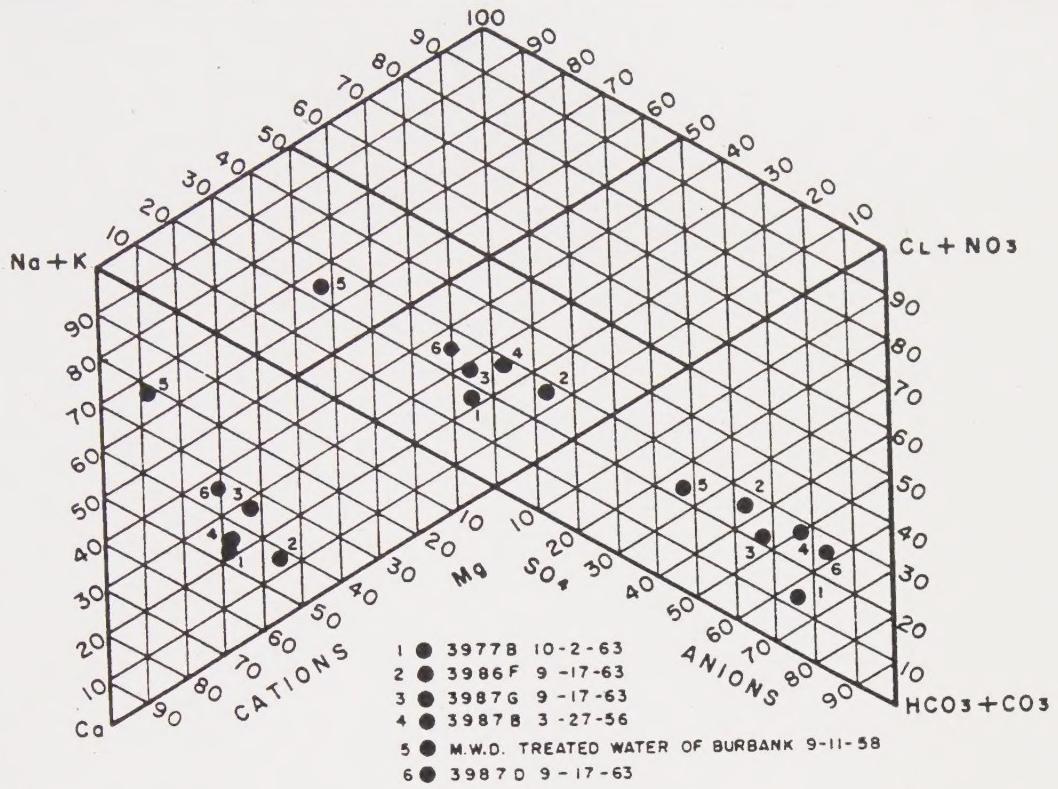


Figure 3

Figure 4



EXAMPLE OF TRILINEAR PLOT AND DETERMINATION OF TYPE OF WATER
LEGEND

- Computed from mineral analysis of water from well No. 3882L
- Mineral character of water determined by intersection

EAGLE ROCK SUBAREA MINERAL CHARACTER OF WATER

U.C. BERKELEY LIBRARIES



C124915179

